MAY 15, 1952

MODERN MEDICINE

The Journal of Diagnosis and Treatment

Dr. Robert Turell *(see page 11)*

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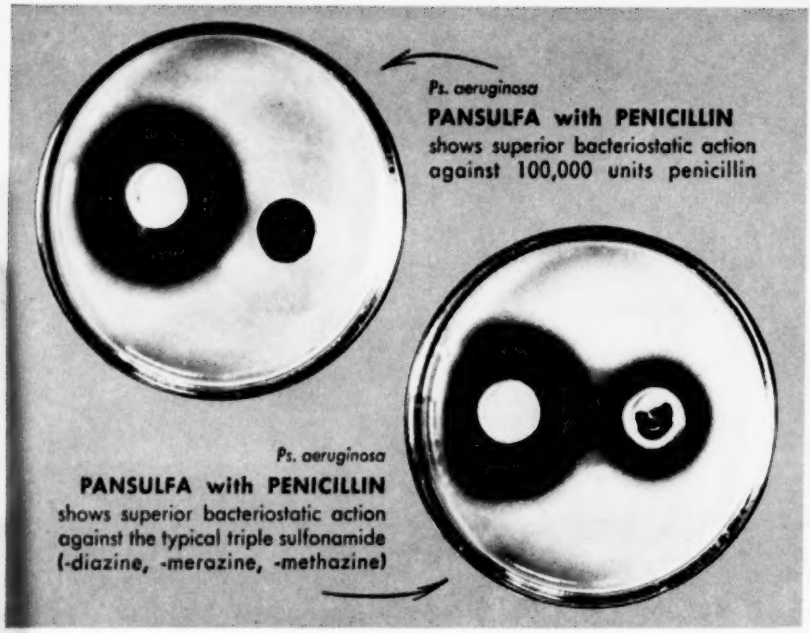

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*See Lehr, D., N. Y. St. J. Med. 11:1361, 1950

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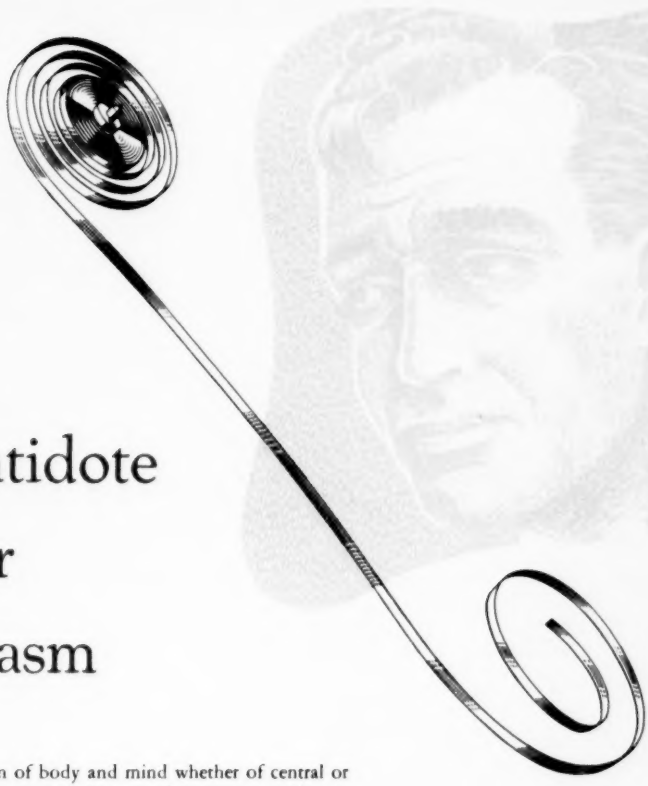

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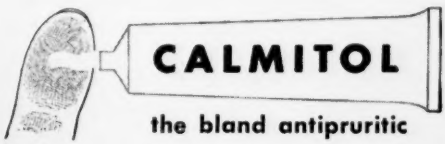

1. Underwood & Gaul: J.A.M.A., 130:249, 1946.
2. Goodman, Herman: J.A.M.A., 129:707, 1945.

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MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

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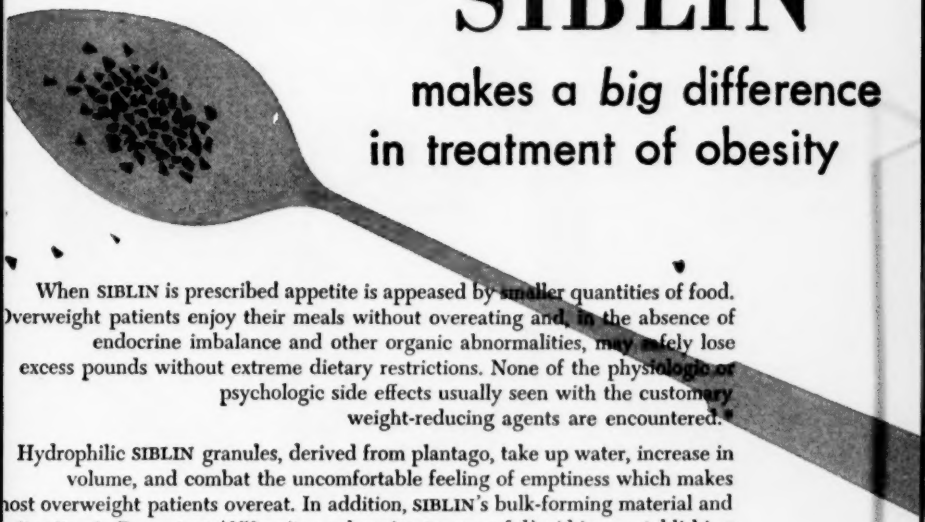

When SIBLIN is prescribed appetite is appeased by smaller quantities of food. Overweight patients enjoy their meals without overeating and, in the absence of endocrine imbalance and other organic abnormalities, may safely lose excess pounds without extreme dietary restrictions. None of the physiologic or psychologic side effects usually seen with the customary weight-reducing agents are encountered.*

Hydrophilic SIBLIN granules, derived from plantago, take up water, increase in volume, and combat the uncomfortable feeling of emptiness which makes most overweight patients overeat. In addition, SIBLIN's bulk-forming material and its vitamin B_1 content (150 units per heaping teaspoonful) aid in re-establishing peristaltic function and muscular tone which are frequently impaired in patients with irregular or capricious dietary habits.

dosage: Two or more teaspoonfuls of SIBLIN as determined necessary to create a sense of fullness, followed by one or two glasses of water, one-half hour before luncheon and dinner.

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hemorrhoidectomy: To insure soft stools — One teaspoonful with a full glass of water, after meals.

SIBLIN is supplied in 4-ounce and 16-ounce packages.

*Jonas, A. D.: A Psychobiologic Approach to the Problem of Obesity, Am. Pract. *1*:933, 1950.

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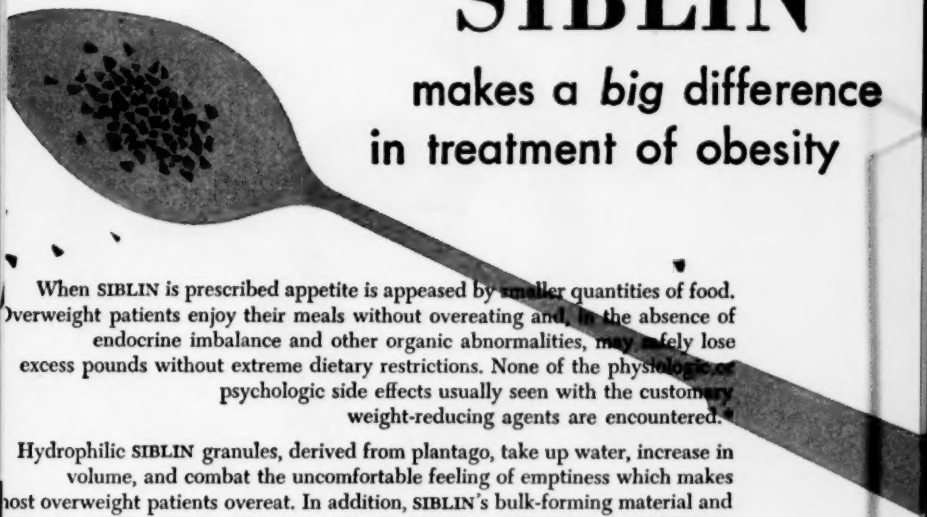

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for
May 15
1952

Modern Medicine

Vol. 20, No. 10

THE MAN ON THE COVER is Dr. Robert Turell of New York City, guest editor of the Symposium on Proctology, beginning on page 73. In charge of proctology at Montefiore Hospital, Dr. Turell is also associate attending coloproctologist at Montefiore and Harlem hospitals, associate attending proctologist at Beth Israel Hospital, and an adjunct of Mount Sinai Hospital. He is a member of the New York Academy of Medicine, New York Academy of Sciences, American Proctologic Society, American Association for Advancement of Science, American Federation for Clinical Research, and American Writers' Medical Association. On the editorial board of *GP*, Dr. Turell has written over 60 articles and is author of the book, *Treatment in Proctology*.

Contents for May 15 1952

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Contents for May 15 1952

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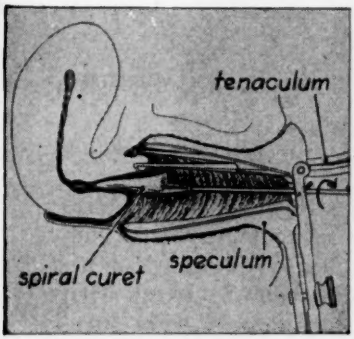
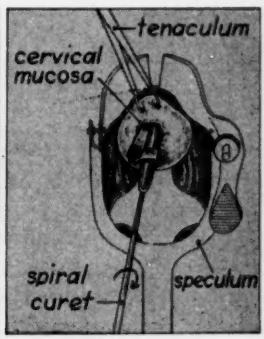
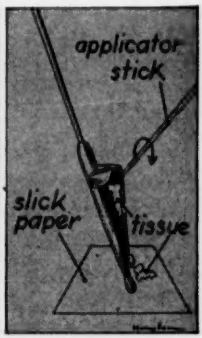
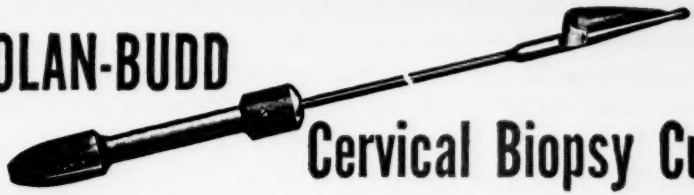






NOLAN-BUDD Cervical Biopsy Curet



FEATURES...New curet* means *simple procedure for the doctor*—can be carried out in the office without anaesthesia. *Simplifies work of pathologist*—utilizes routine paraffin embedding, microtome sectioning, staining with hematoxylin and eosin, and microscopic study.

CLINICAL PROCEDURE

No anaesthesia is required. The cervix is grasped with a tenaculum. The curet is introduced gently into the cervical os with rotation in a counter-clockwise direction until it is inserted as high as possible in the canal. The material collected in the cup is then transferred to the surface of a small square of paper with an applicator stick.

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The collected blood, mucus and tissue are fixed and embedded as with other tissue specimens. Staining is carried out in the usual manner with hematoxylin and eosin. Time for preparation is the same as for other routine biopsies. Examination is facilitated since the tissues are concentrated in a small space on the slides.

E-425/55 Nolan-Budd Cervical Biopsy Curet...ea. $20
Form 515B gives complete details.

**J. F. Nolan, M.D., and J. W. Budd, M.D., Los Angeles Tumor Inst.*, Cancer, *4, 6, Nov. 1951, pp. 1367-1371.*

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LETTER FROM THE EDITOR

Dear Reader:

Have you made plans for a vacation? I hope you have and that you take one.

One of the books I love most is Philip Barry's play *Holiday*. It appeals to me because it is the story of a man who, early orphaned, spent the next twenty years struggling to keep alive and get an education. Then he made much money, and with this he decided to take a year off—a holiday—during which he, for the first time in his life, would sit down and figure out what life was all about, why he was working so hard, in what direction he wanted to go, what he wanted to do, and what he most wanted to get out of the years that remained.

Might it not be well if all of us were to stop for a moment to look where we are going, and to wonder if we are doing all we can to live wisely and richly and usefully?

Doctors more than most men seem always to be so very busy and to have dozens of excuses ready made for not taking time off now. Next year, perhaps, but now things are too pressing. As a matter of fact, affairs will always be pressing until you take time by the forelock. You must arrange time for the things that you want to do, for the things that must be done.

We don't have to take a year off as Barry's hero did. Nor do we expect to come up with the answers to all the questions he asked himself. But even a short vacation away from the pull of everyday affairs will help to restore perspective and make life more enjoyable. And it will make you a better practitioner and increase your value to your patients.

Let us prescribe a vacation for ourselves and take our own medicine.

Walter C. Alvarez

EDITOR-IN-CHIEF

WHEN CHILDREN ARE "PROBLEMS"

When you have the problem of restlessness and crossness in children with concurrent acute disease

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Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Correcting an Inconsistency

TO THE EDITORS: In my discussion on "The Myth of Bed Rest for Heart Disease" which appeared in the March 1, 1952 issue of *Modern Medicine* there is a typographical error which unfortunately reverses the information I wish to impart.

On page 158, in the second paragraph of my article, the sentence starting on the twenty-sixth line of the first column reads: "It is a pity that centuries of experience with ingeniously graded restraining in famous spas have been brushed aside as so much hocus-pocus." The word "restraining" should read "retraining." Since this error creates an inconsistency with what I propound in the article, I should very much appreciate a correction in a forthcoming issue.

S. H. MAY, M.D.

New York City

DDT Poisoning in Children

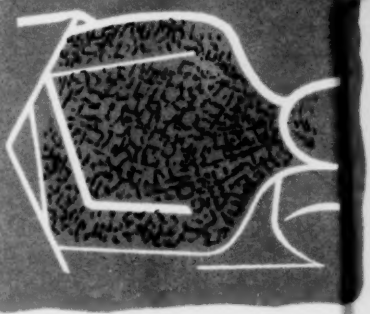
TO THE EDITORS: The important observations of Drs. Peter Gruenwald and Mendel Jacobi on interstitial pneumonitis occurring in sudden death or rapidly fatal illness in infants *(Modern Medicine,* Feb. 15, 1952, p. 134) deserve widespread attention and intensive further investigation.

Prodromal signs of poisoning are described as being usually those of an upper respiratory infection and occasionally vomiting, diarrhea, or convulsions.

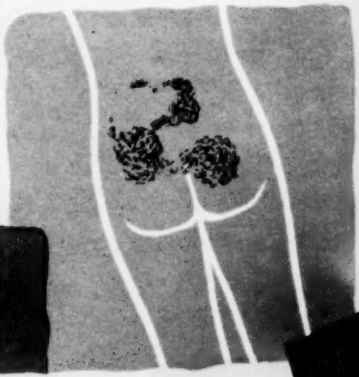
The similarity both of the clinical description and postmortem findings to those of a case observed by Dr. Robert F. Mobbs *(J.A.M.A.* 138:1253, 1948) impressed me as striking. A child living 100 yd. from an insecticide mixing plant, continuously exposed to dust containing DDT (dichloro-diphenyl-trichloroethane) and benzene hexachloride (hexachlorocyclohexane) emanating from this plant, died suddenly in convulsions. At autopsy, extensive interstitial pneumonitis was found. Dr. Mobbs then exposed 6 rabbits to this dust in the plant. All 6 died in the second week; all showed severe interstitial pneumonitis. Dr. Mobbs was kind enough to permit

(Continued on page 23)

Contact Dermatitis



Drug Sensitivities



Poison Ivy Dermatitis

ACTHAR

In sensitivity reactions, the patient demands immediate and prolonged relief which may not be obtained with the use of conventional therapy.

The introduction of ACTH in the treatment of sensitivity reactions and contact dermatitis marks a significant advance in this field of medicine. Suppression and reversal of the clinical manifestations of sensitivity reactions may well be called classical reasons for the use of ACTH.[1-15]

This insert may be detached for filing.

ACTHAR* *in*

DRUG SENSITIVITIES AND CONTACT DERMATITIS

THE INCIDENCE of drug hypersensitivities and contact dermatitis has been steadily increasing, inasmuch as millions of people are exposed daily to chemotherapeutics, antibiotics and industrial chemicals with sensitizing capacities.[16, 17]

The specificity of ACTH in the treatment of these unpredictable disease states is well established. In acute cases of hypersensitivity, ACTH is of inestimable value; relief is rapid and complete. In contact dermatitis ACTH is frequently the only form of treatment in patients resistant to conventional therapy.

The small doses required for the control of hypersensitivity reactions and acute contact dermatitis need be given only for short periods of time, thus minimizing the incidence of side-effects.

(1) Carr, E. A., Jr.: New England J. Med. 245: 892 and 935, 1951; (2) Bordley, J. E., et al.: Bull. Johns Hopkins Hosp. 85: 396, 1949; (3) Bordley, J. E., et al.: In Mote, J. R.: Proc. First Clin. ACTH Conf. Philadelphia, Blakiston Co., 1950, p. 469; (4) Steinberg, C. L., and Roedenberg, A. I.: J.A.M.A. 146: 1225, 1951; (5) Carey, R. A., et al.: Bull. Johns Hopkins Hosp. 87: 354, 1950; (6) Kierland, R. R., et al.: J.A.M.A. 148: 23, 1952; (7) Feinberg, S. M., et al.: J. Allergy 22: 195, 1951; (8) Seltzer, J. G.: J. Florida Med. Assn. 37: 709, 1951; (9) Dolkhart, R. E.: GP 4: 73, 1951; (10) Flood, J. M.: Guthrie Clinic Bull. 21: 3, 1951; (11) Rose, B., et al.: In Mote, J. R.: Second Clin. ACTH Conf. Philadelphia, Blakiston Co., 1951, Vol. 2, p. 414; (12) Lever, W. F.: New England J. Med. 245: 359, 1951; (13) Gordon, E. S., et al.: In Mote, J. R.: Proc. Second Clin. ACTH Conf. Philadelphia, Blakiston Co., 1951, Vol. 2, p. 30; (14) Reynold, A. E., et al.: New England J. Med. 244: 795, 1951; (15) Mandel, W., et al.: J.A.M.A. 146: 546, 1951; (16) Lane, C. G.: New England J. Med. 246: 77, 1952; (17) Flaxman, N.: GP 4: 47, 1951; (18) Ekblad, G. H.: Arch. Dermat. & Syph. 64: 628, 1951; (19) Rosenberg, I. N., et al.: Arch. Int. Med. 88: 211, 1951; (20) Bastian, R.: Personal Communication; (21) Fromer, J. L., and Cormia, F. E.: J. Investig. Dermat. (to be published).

*The Armour Laboratories Brand of Adrenocorticotropic Hormone—Corticotropin U.S.P. (A.C.T.H.)

THE ARMOUR LABORATORIES

Short course of therapy... small doses

An interesting group of 12 patients with acute urticaria have been reported in which very small total amounts of ACTH, 10 to 40 I.U. (U.S.P. units) were used for a day or even less. Ten of the 12 patients showed prompt and full relief of signs and symptoms even from this low dosage and short period of treatment. Urticaria was caused by *paint* (1), *food* (1), *sulfonamides* (1), and *penicillin* (9). Cortisone was administered to some of the patients, but was considered less effective than ACTH.[18]

Completely refractory to conventional therapy

A patient with angioneurotic edema and urticaria due to *penicillin*, who had been completely refractory to antihistaminics, epinephrine and sedatives, responded satisfactorily to a short course of ACTH therapy.[19]

Poison ivy dermatitis

Severe poison ivy dermatitis in a physician's son, aged 10, responded rapidly to six doses of ACTHAR *Gel*, given in doses of 40 I.U. (U.S.P. units) every 6 hours. The boy recovered completely in 72 hours. Conventional therapy tried prior to ACTH had failed.[20]

Intractable anogenital pruritus

Impressive results are reported from the administration of ACTH in 4 patients with chronic, intractable anogenital pruritus. One patient had suffered for 20 years without relief from conventional therapy; a second patient also had derived no benefit from customary methods; a third patient had to be hospitalized in an acute panic state. All of these patients experienced complete relief from ACTH. No recurrence was noted.[21] The fourth case, after 2 months of freedom from symptoms, relapsed. There was a deep-seated anxiety state present in this patient.

in drug sensitivities and contact dermatitis

PRODUCTS	HOW SUPPLIED	HOW TO PREPARE	DOSAGE
ACTHAR Powder (Lyophilized)			
For Intravenous Infusion. In hospitalized patients with severe allergic reactions. Maximal and most rapid adrenal cortical stimulation with smallest amount of ACTH.	Vials of 10, 15, 25 and 40 I. U. (U. S. P. units)	Dissolve 20 to 25 I.U. (U.S.P. units) of ACTHAR in 500 cc. to 1000 cc. of 5% dextrose in water; administer as continuous intravenous infusion.	20 to 25 I.U. (U.S.P. units) over an 8-hour period daily by intravenous infusion for at least 3 days.
For Intramuscular Injection. When hospitalization is not necessary, intramuscular injections provide convenient and adequate therapy.	Vials of 10, 15, 25 and 40 I. U. (U. S. P. units)	Dissolve individual dose in 1½ to 2 cc. of distilled water.	25 I.U. (U.S.P. units) q. 6 h. for at least 3 days. If extended beyond 3 days, taper dosage according to package instructions.
ACTHAR *Gel* (in Gelatin)			
For Intramuscular Injection Only. A repository form of ACTH for ***both rapid response and prolonged action.*** Requires only 1 or 2 injections in 24 hours.	5 cc. multiple dose vials in 20 I.U. (U.S.P. units) and 40 I.U. (U.S.P. units) per cc.	Expose vial to warm tap water to liquefy.	40 I.U. (U.S.P. units) q. 12 h. for at least 3 days. Brief, firm, pressure-type massage is recommended following each injection. Rotate sites of injection.
For maximal convenience in home and office treatment.	Sterile 1 cc. B-D** cartridge with B-D disposable cartridge syringe in 20 I.U. (U.S.P. units) and 40 I.U. (U.S.P. units) per cc.	Expose cartridge to warm tap water to liquefy.	

*The Armour Laboratories Brand of Adrenocorticotropic Hormone—Corticotropin U.S.P. (A.C.T.H.)

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PHYSIOLOGIC THERAPEUTICS THROUGH BIORESEARCH

me to examine the histologic sections myself.

Coryza, vomiting, diarrhea, and convulsions are well-known toxic effects of DDT. The extremely widespread use of DDT and related substances in the home, especially in aerosol form, leads to frequent intensive exposure of infants, for whom these preparations are generally considered harmless by the public. In a recent statement from Regional Office V of the U. S. Public Health Service (Oct. 31, 1951) it is pointed out:

> DDT is a delayed-action poison. Due to the fact that it accumulates in the body tissues, especially in females, the repeated inhalation or ingestion of DDT constitutes a distinct health hazard. The deleterious effects are manifested principally in the liver, spleen, kidneys and spinal cord.
>
> DDT is excreted in the milk of cows and of nursing mothers after exposure to DDT sprays and after consuming food contaminated with this poison. Children and infants especially are much more susceptible to poisoning than adults.

R. O. Bauer and W. W. Jetter (*Federation Proc.*, Vol. 8, no. 1, March 1949) reported that exposure of rats to inhalation of a DDT aerosol mixture led to "moderate to severe interstitial pneumonitis in all test animals."

It is of course impossible to cite here the vast amount of other pertinent data in the literature. However, the available evidence indicates the urgent advisability of investigating in all cases of sudden infant death of the type reported by Drs. Gruenwald and Jacobi the possibility of prior exposure to DDT and related preparations and especially to aerosol mixtures.

MORTON S. BISKIND, M.D.
Westport, Conn.

Fibrositis of Gouty Origin . . .

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DOSAGE • *IN ACUTE CASES*—medical management includes two tablets Cinbisal (representing colchicine 0.5 mg. and sodium salicylate 0.6 Gm.) every hour until pain is relieved, unless gastrointestinal symptoms appear. (Eight to ten doses are usually sufficient.)

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Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota*

QUESTION: In view of the variable periods of time given for normal intrinsicoid deflection of the normal heart, what duration of time should be used to calculate the intrinsicoid deflections of both right and left cardiac hypertrophies in the unknown electrocardiogram? In regard to duration of time, may the intrinsicoid deflection be obtained with either Dr. Goldberger's or Dr. Wilson's central terminal lead? May cardiac hypertrophy be diagnosed on the basis of the increased period of intrinsicoid deflection without any other alteration occurring in the precordial QRS complex?

M.D., Massachusetts

ANSWER: *By Consultant in Internal Medicine.* The conflicting data concerning normal onset of the intrinsicoid deflection reflect the lack of reliability of this criterion in diagnosis of right and left ventricular strain.

A wide time lag between the beginnings of this deflection over the right and left precordium is of value in the localization of intraventricular conduction defects to the right or left side. However, with no pronounced delay of intraventricular conduction, a lead taken, for example, over the right precordium cannot represent only right ventricular activation, since activation of the left ventricle, which is known to be dominating in the genesis of the electrocardiogram, is responsible for the downstroke seen in right-sided chest leads.

Moreover, Sodi-Pallares, in agreement with the views of Wilson's school, has demonstrated that the time of arrival of the wave of excitation in a certain area of the heart does not coincide with the peak of the R wave obtained in a precordial lead over this area, and that activation of this region actually may be completed during the downstroke of the intrinsicoid deflection or even at its nadir. Also, if the precordial electrocardiogram is analyzed on a vectorial basis, instead of under the assumption of proximity potentials, the intrinsicoid deflection represents the instant in which the momentary *summation vector* changes direction abruptly in no relation to completion of activation or to thickness of the wall of one or the other ventricle.

In view of these data, the time of onset of the intrinsicoid deflection can be only of minor value in the diagnosis of heart strain compared with other well-established criteria. Therefore, in regard to the duration of time, whether Wilson's or Goldberger's central terminal lead is used in order to determine the intrinsicoid deflection is irrelevant and of little consequence.

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WYCHOL is offered for use in the prevention and treatment of excessive fat infiltration of the liver or vascular system and the sequels . . . cirrhosis, nephrosis, atherosclerosis, diabetes, hypothyroidism, etc.

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Capsules WYCHOL, bottles of 100 and 1000.

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CLINICAL EFFECTIVENESS
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Established by
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EVIDENCE

1. Reported at the 41st Annual Meeting of the American Society for Pharmacology and Experimental Therapeutics in Cleveland, Ohio; Federation Proceedings, Vol. 10, March 1951, p. 490.

2. Weiss, A. and Feldman, D.: A Heart Muscle Extract in the Treatment of Cardiovascular Disease, J. Lancet (August) 1951, pp. 320-322.

3. The subject of more than 50 clinical trials for many years by physicians in private practice.

- MYOCARDONE advantageously replaces or augments digitalis therapy in decompensated patients.
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- MYOCARDONE administration caused . . . "increased capacity for exertion, decrease or disappearance of symptoms requiring nitroglycerin in the anginal cases, and in disappearance of orthopnea, pulmonary congestion and edema in the decompensated cases."[1]
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Neurodermatitis (Circumscripta as well as Disseminata)
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Dermatitis Venenata
Psoriasis with Allergic Component (as in local bacterial sensitization)
Idiopathic* and secondary Pruritus Ani, Vulvae, and Senilis.

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References

1. Walters, J. D., and Gilman, R. L.: A Combination of Tar and Antihistaminic for Local Use, U.S. Armed Forces M.J. 2:187 (Feb.) 1951.
2. Lawless, T. K.: Personal Communication.
3. Kile, R. L.: Personal Communication.
4. Levine, B.: Personal Communication.

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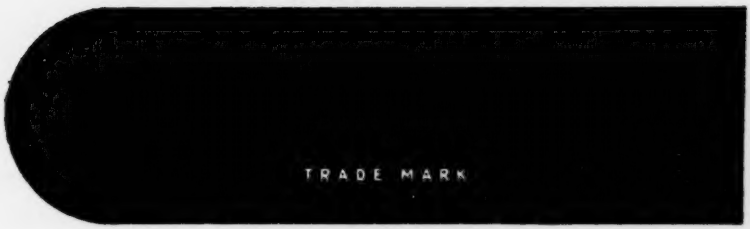

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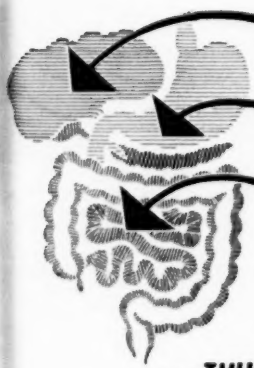

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7½ gr. (0.5 Gm.) *BLUE* CAPSULES CHLORAL HYDRATE — *Fellows*

• DESIRABLE SLEEP lasting from five to eight hours, usually free from undesirable after-effects. Pulse and respiration are slowed in the same manner as in normal sleep. Reflexes are not abolished and the patient can be readily aroused.[2] "CHLORAL HYDRATE produces a normal type of sleep, and is rarely followed by 'hangover'."[1]

Dosage: One to two 7½ gr., or two to four 3¾ gr. capsules at bedtime.

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ODORLESS • NON-BARBITURATE • TASTELESS

3¾ gr. (0.25 Gm.) *BLUE and WHITE* CAPSULES CHLORAL HYDRATE — *Fellows*

• DAYTIME SEDATION for the patient who needs daytime sedation and relaxation with complete comfort.

Dosage: One 3¾ gr. capsule three times a day, after meals.

3¾ gr.

EXCRETION — Rapid and complete, therefore no depressant after-effects.[3, 4]

Available: Capsules CHLORAL HYDRATE — Fellows
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Professional samples and literature on request

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2. Nathuss, M. H., et al: A Course in Practical Therapeutics (1948)
3. Goodman, L., and Gilman, A.: The Pharmacological Basis of Therapeutics (1941), 22nd printing, 1951.
4. Sollmann, T.: A Manual of Pharmacology, 7th ed. (1948), and Useful Drugs, 14th ed. (1947)

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CREMOSUXIDINE®, delicious, chocolate-mint flavored, creamy suspension of SULFASUXIDINE® succinylsulfathiazole, pectin and kaolin, controls infectious and non-specific diarrhea in three important ways. A potent enteric antimicrobial, SULFASUXIDINE reduces intestinal bacterial flora; pectin forms nontoxic conjugation products; kaolin adsorbs toxins and irritants, helps form stools of normal consistency. Each tablespoonful of CREMOSUXIDINE contains SULFASUXIDINE, 1.5 Gm., Kaolin, 1.5 Gm., and Pectin, 1%. SPASAVER® bottles of 16 fluidounces.
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Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

PROBLEM: A doctor's nurse was accidentally injured in the course of her employment and negligent treatment by the same doctor aggravated the injury. Could she collect both workmen's compensation for the original injury and, in a separate suit, damages for the malpractice?

COURT'S ANSWER: Yes.

But the California District Court of Appeal, First District, noted that if the doctor treats an original injury that did not arise from the nurse's employment, his liability, if any, is limited to that arising from negligent treatment of the injury (238 Pac. 2d 1071).

PROBLEM: In Michigan, as in some other states, right to sue for malpractice is outlawed unless brought within two years after its commission, except that the time limit runs from the date the patient discovers the malpractice if it has been fraudulently concealed by the defendant. A suit was brought for alleged malpractice in performing a thyroidectomy nearly six years before—almost four years after the defendant last treated the plaintiff. In the meantime other doctors had administered very much the same treatment. Defendant did nothing that tended to prevent plaintiff from investigating the cause of her postoperational ailments. Was her suit barred by lapse of time?

COURT'S ANSWER: Yes.

The Michigan Supreme Court said that there was an utter lack of proof that the defendant had affirmatively or fraudulently concealed anything from the patient that would indicate malpractice (52 N. W. 2d 180).

In an earlier case, the same court had decided that when a patient sued for alleged negligence in setting and treating a broken leg and defendant had bandaged the leg after considerable treatment, the two-year time limit ran from the date of bandaging (241 N. W. 923).

In a recent case (1949) the same court noted that when postoperative treatment is given, the time within which suit may be brought for malpractice does not commence to run until the treatment ends (35 N. W. 2d 351).

PROBLEM: Does the mere fact that a contract obligates one party to "furnish medical attendance" to the other in case of accident make the obligor liable to a physician who has rendered medical services at the request of the second party to the contract?

COURT'S ANSWER: No.

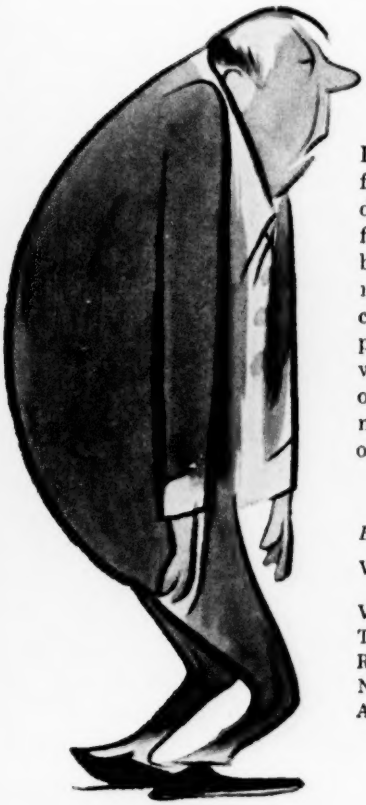
The Arkansas Supreme Court considered the legal effect of such a provision in an employment contract and decided that it was for the sole benefit of the employee. It was specially noted that the agreement was to "furnish" medical attendance and not to pay a doctor for such

(Continued on page 43)

Sick people need nutritional support

specify **THERAGRAN**

Therapeutic Formula Vitamin Capsules Squibb



Even if an optimal diet is prescribed for — and eaten by — the sick person, diet alone will not correct vitamin deficiencies rapidly. Theragran will help bring earlier and more satisfactory recovery after surgery, will help to correct dietary deficiencies among patients who are "bad eaters," and will add greatly to the effectiveness of the therapeutic and supportive measures in patients who are older or chronically ill.

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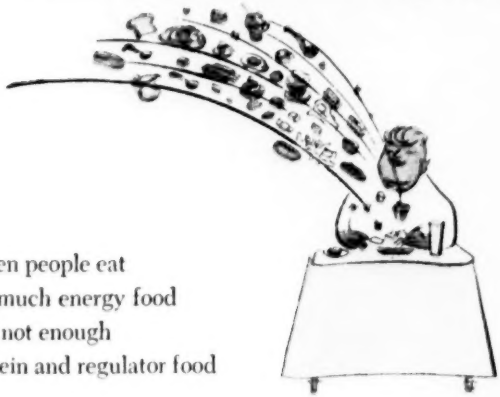
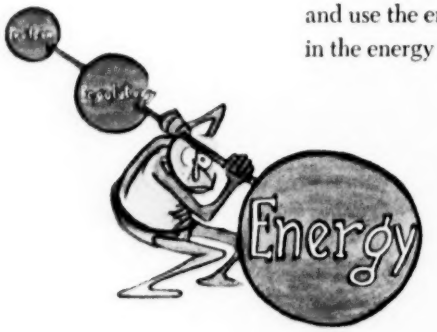
"Diet Instructions"
your patients' guide to better diet

You need to watch what you eat



When people eat
too much energy food
and not enough
protein and regulator food

. . . they do not get enough
protein, vitamins and minerals,
which they need to keep well
and use the energy
in the energy foods.



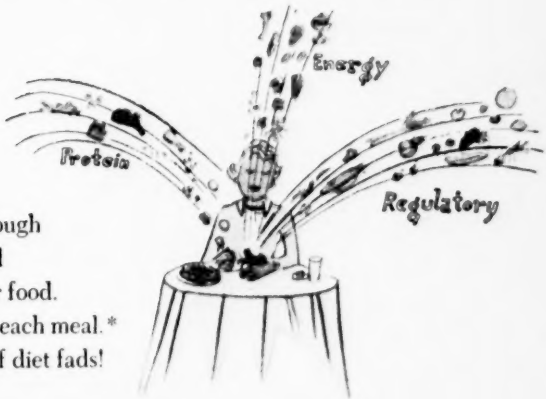
Then they may
need large quantities
of protein,
vitamins or minerals
to get well.

. . . see preceding page

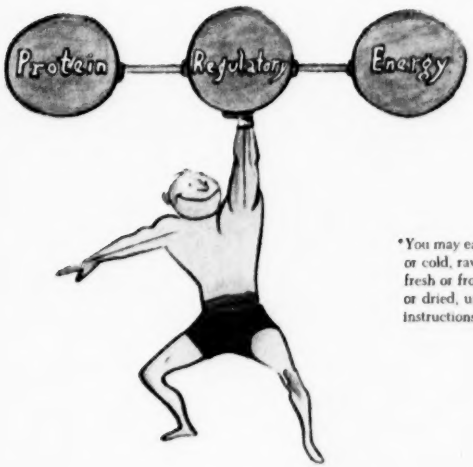
This is a reproduction of pages 6-7 from "Diet Instructions," a new practical guide to better diet for your patients. For a supply of booklets write to E. R. Squibb & Sons, 745 Fifth Avenue, New York 22, N.Y.

see following page . . .

You need to watch what you eat



You must eat enough protein food, and enough regulator food. Try to do this at each meal.* Avoid all kinds of diet fads!



*You may eat food hot or cold, raw or cooked, fresh or frozen, canned or dried, unless special instructions are given.

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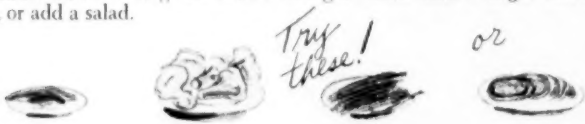
"Diet Instructions" show your patients how much is enough

Toast and coffee isn't enough to start the day on. It's better to add vegetable or fruit juice and an egg.

A small piece of meat doesn't give you enough protein. Increase the size of the portion of meat, or also eat some other protein food, or drink milk.

A small dish of string beans isn't enough. Better take a larger serving . . . or add a salad.



A lettuce leaf and slice of tomato doesn't really count. You need more regulator food . . . such as raw cauliflower chunks, sliced carrots, or cucumber rings.

"Diet Instructions" is the new simply written guide to better eating habits for your patients. To obtain a supply just write to E. R. Squibb & Sons, 745 Fifth Avenue, New York 22, N. Y.

. . . see preceding pages

SQUIBB

attendance as the employee might secure himself (44 S. W. 218).

The decision was rendered before workmen's compensation laws were adopted and, of course, does not mean that a statute obligating an employer for the payment of medical and surgical expense may not be so worded as to make an employer or his insurer directly liable to the doctor.

PROBLEM: A husband failed to provide available medical care for his wife who had multiple sclerosis and had been unable to walk without assistance for five years. Did that, coupled with other neglect, entitle her to an award for separate maintenance in a suit in which he unsuccessfully sued for divorce?

COURT'S ANSWER: Yes.

This case was decided by the Michigan Supreme Court (52 N. W. 2d 177).

PROBLEM: Defendant, physician and owner of a hospital, used an oxygen tent and vaporizer in treating a 1-month-old baby for a bronchial ailment. Facial burns resulted. The accident would not have been likely to occur if the vaporizer had been properly operated. In a malpractice suit, was it incumbent upon the doctor to show that he was not at fault?

COURT'S ANSWER: Yes.

The trial court in this case had dismissed the suit on a theory that negligence of the defendant had not been proved. But the Arizona Supreme Court ordered a new trial on the ground that the doctor was bound to know that the vaporizer was dangerous if not properly operated and because evidence tended to show that the spout through which medicated steam was introduced into the tent was too close to the infant's face (239 Pac. 2d 591).

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There are many indications that the growing field of muscle stimulation therapy has an important place in General Practice. Many alert modern physicians are finding this new field a progressive way to improve their practice. If you have ignored this field the following QUESTIONS & ANSWERS *may provide you with some of the information about muscle stimulation—and how it fits into your practice.*

Questions & Answers

Q: What are its therapeutic applications?

A: Adjunctive to massage to help prevent and treat muscle degeneration that may complicate the following conditions: fractures, nerve inflammations (Bell's Palsy), prolonged chronic illness (hypertension), incapacitating diseases (arthritis), pendulant abdomen due to stretching of the muscles (multiple pregnancies), and many others.

Q: What is meant by muscle stimulation?

A: The stimulation of a muscle motor point by means of an electrical wave of current (MULTITONE) thereby causing a contraction.

Q: What is MULTITONE?

A: MULTITONE is an instrument that can produce a sharp peaked wave (not a sine wave) of electrical impulse. When applied to a motor point it will cause the contraction of innervated voluntary muscle.

Q: Is this the only feature of MULTITONE?

A: No, MULTITONE also has
1. a continuous current
2. fast and slow interrupted currents.
3. a push and pull current.

Q: Is MULTITONE complicated to operate?

A: No, simply follow the Multitone Motor Point Chart and attach the pads to stimulate whatever voluntary muscles you select.

Q: Does it shock the patient?

A: No, MULTITONE is operated on less than 5 milliamperes of current. There is a minimum of unpleasant sensation. Most patients enthusiastically request further treatments and say they feel exhilarated.

Q: Is muscle stimulation and MULTITONE worth the expense?

A: Besides the clinical improvement in your patients' condition MULTITONE will add to your practice an entirely new source of income that has been neglected. Doctors have discovered that MULTITONE can pay for itself in a few weeks. Three convenient payment plans are available.

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(*brand of hydralazine*)
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* **Clinically investigated as C-5968 and also 1-Hydrazinophthalazine, hydrochloride**

Major Advance in the Medical Management

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By virtue of its dual capacity to reduce blood pressure and yet increase blood flow through the kidney, Apresoline provides a new and improved approach to the medical management of hypertensive disorders. Its value is augmented by its tendency to cause significant relaxation of cerebral vascular tone in hypertensive patients, oral as well as parenteral effectiveness, and relatively low toxicity.

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Apresoline has proved therapeutically useful in widely differing forms of hypertensive disease. The drug is of distinct value in essential and early malignant hypertension, its effectiveness often being more marked in the severe (although not terminal) phases of these disorders. It is also most effective in hypertension persisting or recurring after sympathectomy.

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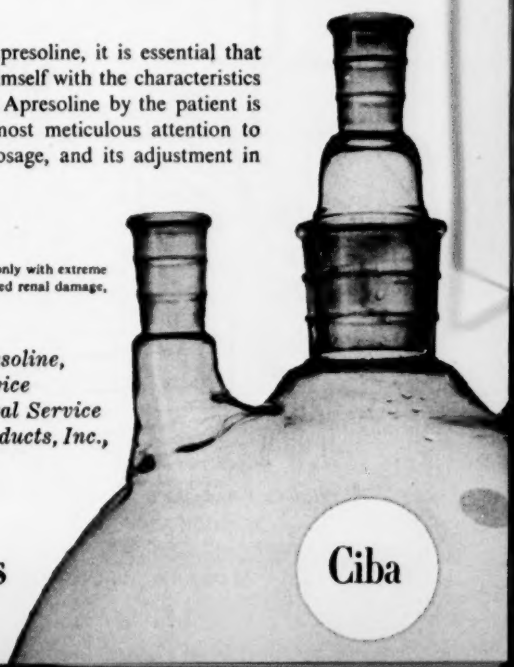
Before prescribing or administering Apresoline, it is essential that the physician thoroughly familiarize himself with the characteristics of the drug. The benefit derived from Apresoline by the patient is dependent in vital degree upon the most meticulous attention to individualization of administration, dosage, and its adjustment in accordance with response.

Caution

Apresoline, like any hypotensive agent, should be used only with extreme caution in patients with coronary artery disease, advanced renal damage, and existing or incipient cerebral vascular accidents.

For complete information on Apresoline, contact the Ciba Professional Service Representative or write the Medical Service Division, Ciba Pharmaceutical Products, Inc., Summit, New Jersey.



# of Hypertensive Disorders

Ciba

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Washington Letter

Election Year Politics Shelves Health Legislation

SO far this session Congress has made at least one thing clear: It is too busy with politics and other things to pay much attention to medical legislation. Furthermore, its disinterest has been positive; instead of just leaving bills in committee, a number of pieces of legislation have been hauled up for hearings, then formally rejected.

Some examples of what has been taking place in Congress the last few weeks:

►*The proposal of Rep. Frances Bolton (R., Ohio) for subsidizing nursing schools and nursing students was turned down by the House Interstate and Foreign Commerce Committee.*

This idea had been argued for two years. Its sponsors were confident that some sort of bill would be reported out so House members would have a chance to vote on it. Instead the committee, at a series of rapid-action executive sessions, first chopped down the bill, then rejected it altogether.

"A snake, an egg, a goal post, a pole, a horseshoe . . ."

►*In reporting out the Universal Military Training bills, both the House and the Senate committee ignored most suggestions from medical groups and individuals concerning deferment of medical students from reserve service.*

Both committees had been asked to amend the bill so that medical students, after finishing the basic six-month course, would be excused from reserve service until completion of their edu-

(Continued on page 55)

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Potassium	1.7 mg.
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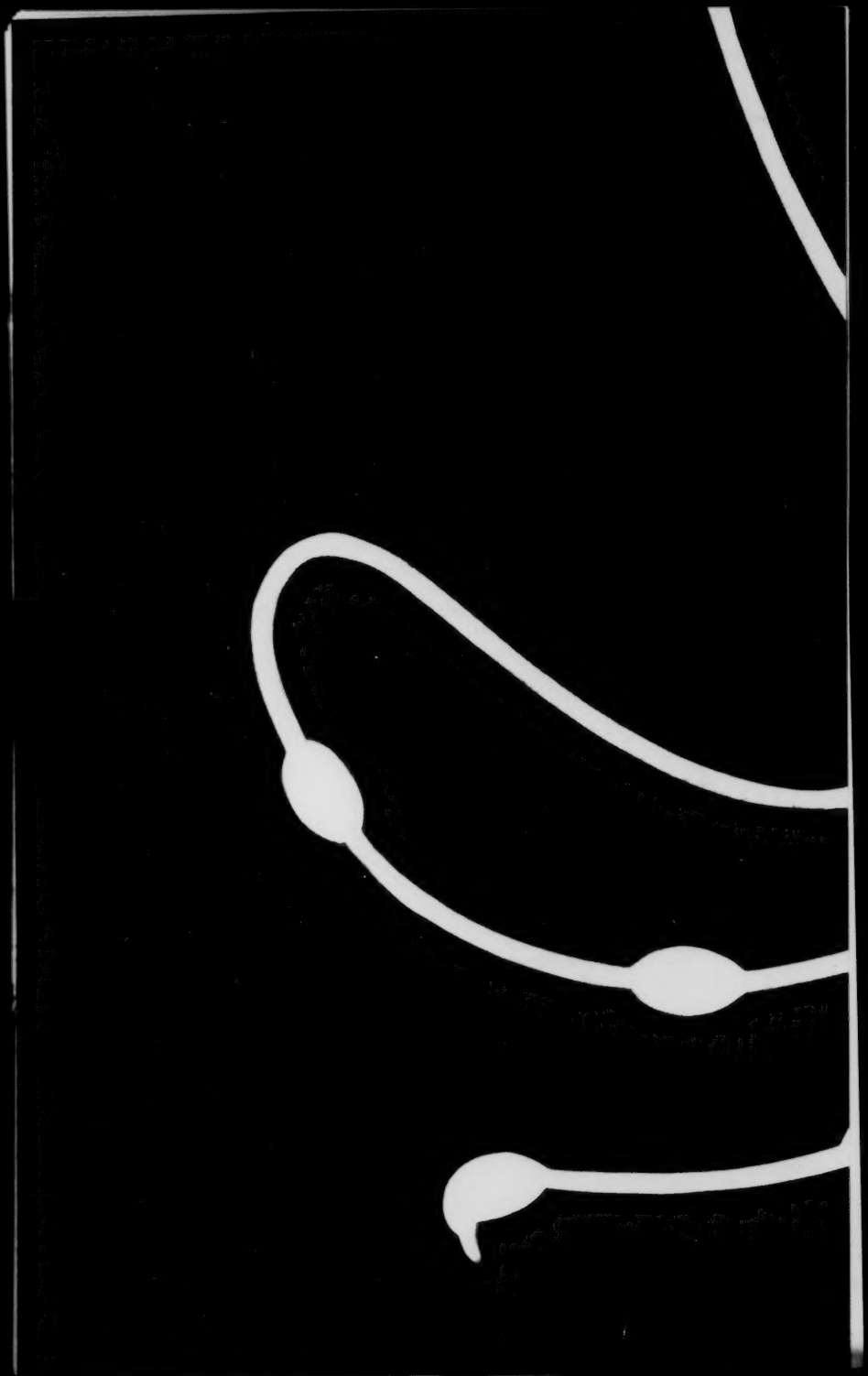

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*Kramer, P. and Inselfinger, F. J. Med. Clin. North Amer. 32:1227, 1948.

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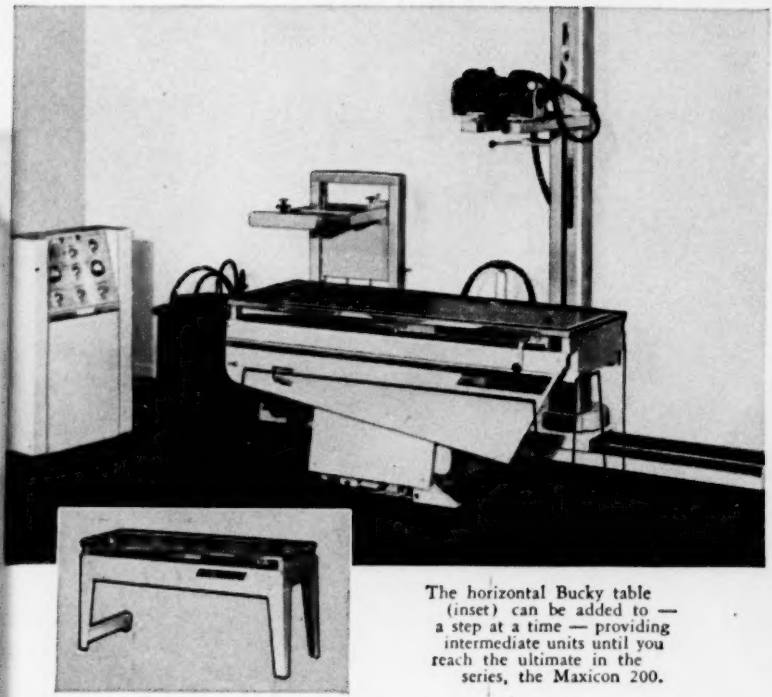

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cation. The committees decided that such a provision didn't belong in the bill. Subsequently, the House defeated UMT, so committee action is important only in indicating the mood of Congress.

► *A special House subcommittee which has been investigating the question of need for stricter federal control over barbiturates unexpectedly called a three-hour hearing, then dropped the whole subject.*

With the exception of some officials in Federal Security Agency, all important witnesses and groups have opposed such an idea. However, this subcommittee, under chairmanship of Rep. Hale Boggs (D., La.), has been working on the problem for more than a year. Among some sections of the press, and some individuals, pressure for federal intervention in the barbiturate field is intense.

► *A new obstacle to the emergency maternity and infant care program for families of servicemen has arisen.*

Sen. Lehman's subcommittee collected a mass of testimony, mostly in favor of some such legislation. Then the committee members' spirits were dampened to the point of extinction when the U. S. Budget Bureau said that such a program wasn't needed. In this case, at least, the committee apparently wanted to report out a bill, but the Budget Bureau's objection will be difficult to overcome this year.

► *The House Appropriations Committee, later supported by the House, eliminated a fund of $250,000 which was proposed to help states start programs for fluoridation of water supplies.*

The action had crushing effect on Public Health Service's Division of Dental Health Facilities, which had

hoped to stimulate all sections of the country in the direction of fluoridation. Now, almost no federal money will be available for this work, just at the time when communities everywhere are looking for guidance and technical assistance.

► *First the Budget Bureau, then the House of Representatives subjected Public Health Service's budget to a tight squeezing.*

The net total to be allowed PHS for the fiscal year starting July 1 probably will be about 20% less than available for current spending, and about 10% less than the Budget Bureau recommended.

► *Legislation for federal aid to medical, dental, and nursing schools, which stirred up considerable support last year, is waiting a place on the Senate calendar which it is unlikely to get.*

In the House, the Interstate and

(Continued on page 60)

"Oh you can be quite frank with me, Doctor, because I don't understand those medical terms anyway."

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Foreign Commerce Committee shows no interest in reporting out a companion bill.

Meanwhile, Federal Security Administrator Oscar Ewing continues to promote his plan for hospitalization of social security beneficiaries at 65 and to announce periodically that "legislation will be introduced soon."

As this is being written, an effort is being made to draft a program which would make use of Blue Cross and other insurance plans as "fiscal agents" handling the bookwork for the federal government.

However, in view of what's happening to other health legislation, prospects for action on this are not very bright.

Lobby Law Decision

Decision of a special U. S. District Court holding the lobbying law unconstitutional is good news for a number of state medical societies. Several had felt that they qualified as lobbying organizations and had registered in Washington. Other state medical societies have been considering the question and were prepared to register.

Under the lower court's decision, no organization will be required to register and report collections and spending, regardless of the efforts made to influence legislation. Paid lobbyists still have to register, but the penalty section of the law is

(Continued on page 208)

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1. Rossien, A. X. and Victor, A. M.: The Influence of An Antacid (nonreactive aluminum hydroxide gel) On Evacuation of the Bowels and the Fecal Column, *Am. J. Dig. Dis.*, 14:226, 1947.

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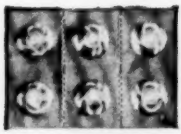

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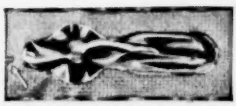

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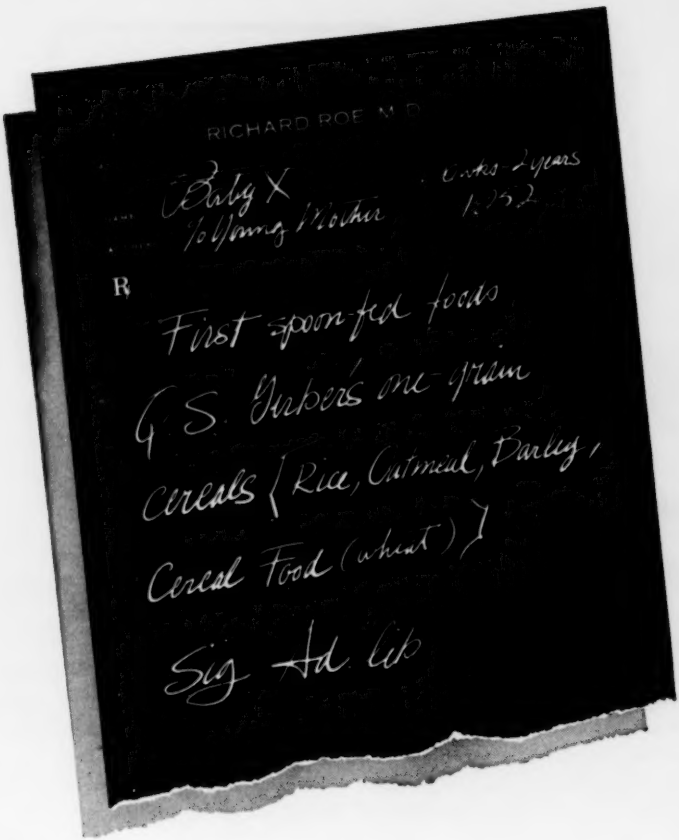

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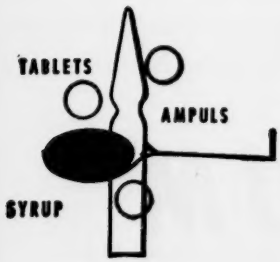

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MEDICAL DEPARTMENT
Wyeth Incorporated

Risk of Surgery

in face of an old myocardial infarct

A Modern Medicine Editorial

One of the questions that comes up every so often is: Can one operate on a man who has recovered from a coronary thrombosis? You would expect the operative mortality to be somewhat increased in these cases, but is the increase large enough to be prohibitive?

Brumm and Willius (1939) once reviewed the records of 257 patients with angina pectoris who had had to be operated on at the Mayo Clinic and found that only 11 died postoperatively as a result of cardiac complications. This showed that when a man with a healed cardiac infarct has a good cardiac reserve, and when he has access to a skilled anesthetist and a surgeon who can work rapidly and deftly, he has little more to fear than has the man with a good heart.

Naturally, in doubtful cases, the decision whether to operate must depend largely on the need. A man with a hernia might well carry on with his truss, while the patient with a carcinoma has to take the risk whether he wants to or not.

A good discussion of this problem is presented by Charles A. Hannigan and colleagues (*Am. J. M. Sc.* 222:628-639, 1951). In a group of 58 patients operated on in spite of evidences of myocardial infarction, mortality was only 5.2%. This compares well with 3.4% mortality among a group of 260 patients between the ages of 60 and 71 years without heart disease who were subjected to a similar series of major surgical procedures.

Pentothal anesthesia seems to be inadvisable for the patient with an old myocardial infarct. It tends to bring cardiac and respiratory complications. As one would expect, the longer the operation, the more likely the patient is to have trouble.

The most important thing is to note whether the person has a good cardiac reserve. The question is not what his electrocardiogram looks like but how far he can walk without getting chest pain or shortness of breath. A man who has a good cardiac reserve commonly survives any operation that can be deftly and rapidly performed.

WALTER C. ALVAREZ

Medical Management of Peptic Ulcer

Proponents of the medical management of benign ulcer of the stomach or duodenum have, since Sippy propounded the principles and established a system of therapy, been convinced that peptic ulcer could be healed and recurrences prevented by inhibiting the deleterious corrosion of gastric juice.

Proof of the competence of a properly conceived and meticulously performed therapeutic plan for permanent healing of peptic ulcer is offered by Rossett, Knox, and Stephenson. Conditions favored success of a medical regimen. The patients were young adult males under federal jurisdiction in two Army general hospitals and in a Veterans Administration unit. But similar conditions could be attained in civilian practice by adherence to a rigid schedule of feeding and medication and strict discipline.

In each of 182 Army patients and 1,106 VA patients with uncomplicated, benign gastric or duodenal ulcer, pain stopped after two weeks of management, in most cases within four days, and ulcers healed in six weeks. No bleeding, perforation, or obstruction occurred during the period of treatment. The feedings comprised the usual soft, bland, nonstimulating, high-protein foods and milk. The medicaments were aluminum hydroxide gel with milk of magnesia, calcium carbonate with milk of magnesia in milk, and tincture of belladonna, all in appropriate amounts.

Among a group of 168 patients with severe hemorrhage, 2 died during the prescribed medical management, which included numerous and copious transfusions of whole blood. Only 3 of 129 patients with obstruction were unable to tolerate the full ulcer diet. These results fully demonstrate that no ulcer should be deemed refractive to healing until the full resources of a carefully planned medical treatment have been exploited.

JAMES B. CAREY

Symposium on Proctology

Foreword

ROBERT TURELL, M.D.
New York City

THIS symposium is addressed primarily to the general or family physician, whom the patient usually consults first and upon whom he relies for advice concerning health matters. The doctor is frequently called upon to pass judgment on the therapy recommended by the specialist, being an important intermediary between patient and specialist.

The specialty of proctology has undergone a great metamorphosis. At the turn of the century, the charlatan was replaced by the ethical anorectal surgeon. More recently, the modern proctologist has emerged, trained in major rectal and colonic surgery. He also has knowledge of general surgery, radiography, and the constantly changing fields of physiopathology and biochemistry.

In this Symposium on Proctology, an attempt is made to concentrate and correlate recent theories and developments and to reemphasize established principles, concepts, and procedures. The object is to present, in a concise way, the management of representative common and potentially serious proctologic disorders so that the general practitioner may participate in the diagnosis and treatment of colorectal lesions.

To accomplish this task, it was my privilege and pleasure to invite a distinguished group of authors to write useful and authoritative articles on medical and surgical proctology encountered by the family physician and the proctologist. I am most grateful to those who have contributed to this symposium and congratulate them on a job admirably done. To Dr. Walter C. Alvarez and his editorial staff I would like to extend my thanks for the opportunity of serving as guest editor.

Prepared for Modern Medicine

New Knowledge of Colonic Physiology

HENRY D. JANOWITZ, M.D.
Mount Sinai Hospital, New York City

THE past several years have seen a developing interest in the physiology of the human colon, especially in the disturbed physiology of colonic disease. Studies on autonomic innervation, the reaction of the colon to stress and drugs, and the biochemistry of the colon in relation to enzyme excretion have resulted in information which has already proved to be of considerable clinical importance.

Congenital megacolon—One area of signal advance has been in the understanding of certain cases of congenital megacolon, Hirschsprung's disease.

Swenson and his co-workers at the Children's Medical Center in Boston have clarified the diagnosis and perfected a rational surgical therapy based on a convincing concept of the etiology of this puzzling disorder.

They have shown that the dilatation and hypertrophy of the megacolon are secondary to malfunction of the rectosigmoid. Using special radiographic technic in such cases, they have demonstrated a narrow irregular rectum and rectosigmoid distal to the dilated sigmoid. Tandem balloon kymography of the motor activity of the colon revealed that a normal peristaltic wave did not progress from the transverse colon to the anus. Active peristalsis did not enter the narrow rectosigmoid segment, which showed increased tone. Finally, they demonstrated that the absence of normal propulsive waves, which constitutes the physiologic defect causing chronic obstruction, could be correlated with the lack of ganglion cells in Auerbach's plexus.

Although the cause of the defect in pelvic parasympathetic innervation is not known, Swenson has successfully removed the narrow irregular area of the rectum and rectosigmoid, completely eradicating the syndrome.

Reaction to stress—Several groups of investigators have shown that the normal colon, the so-called "irritable colon," and the diseased ulcerated colon respond to stressful situations or stimuli—those which the individual interprets as threats to his security—in a variety of patterns rather than a single stereotype.

Almy and colleagues at the New York Hospital, during a four-year intensive study of the irritable bowel syndrome, have demonstrated that young healthy individuals subjected to painful or disturbing situations will manifest many of the phenomena of patients with irritable colons: increased motor activity, mucosal engorgement, increased secretion of mucoid material, and sigmoid spasm with abdominal pain. In individuals with spastic constipation, sigmoid spasm can be induced by stressful situations.

But not all patients with the irritable bowel syndrome respond with increased motility; some manifest marked hypomotility and reduction of tone in the rectosigmoid while the remainder of the gut is hyperactive. This combination of events could account for the periods of diarrhea which alternate with constipation in these subjects.

Similar hyper- or hypodynamic reactions were elicited by Grace and co-workers at Cornell University during psychotherapeutic interviews of patients with ulcerative colitis. Currently of interest is the simultaneous finding by Almy and by Code and associates at the Mayo Clinic that patients with ulcerative colitis have diminished total activity of the colon in the presence of an abnormal sustained propulsive type of wave.

Evaluation of antispasmodics—From physiologic studies on the colon, Posey and co-workers at the Mayo Clinic and Almy and his group have indicated that the clinical failure of many antispasmodic drugs to give patients symptomatic relief from functional colonic disorders may be related to the fact that the majority of such drugs in wide use have no significant effect on colonic motility. Banthine does inhibit spontaneous motor activity of the colon, yet clinical disappointment with this agent for some patients suggests that the element of spasm or increased motility may not always be important in the development of their symptoms.

Enzyme alteration in ulcerative colitis—The evidence furnished by Karl Meyer and colleagues at Columbia University that patients with ulcerative colitis excrete abnormally large amounts of the enzyme lysozyme has opened up fresh approaches in an area otherwise barren of leads for further study. Their evidence demonstrates a clear-cut quantitative biochemical alteration in ulcerative colitis.

But serious difficulties have been found which prevent the ready acceptance of the hypothesis that the basic defect in ulcerative colitis is an overproduction of lysozyme by the colon, which, in turn, leads to impairment of the protective mucous barrier by dissolving the surface layer of mucus and thus rendering the colon susceptible to damage by the local bacterial flora. Lysozyme does not liquefy gastrointestinal mucus, indeed no substrate has been found for the enzyme in the colon. High titers of lysozyme have been found in a variety of experimental and human infected granulating wounds outside the gut.

The enzyme content of the colonic wall has been shown in this laboratory to be correlated with the severity of the inflammatory reaction and the extent of granulation tissue. Finally, the clinical failure of antilysozyme agents in treating ulcerative colitis argues against the importance of the enzyme in the etiology of chronic ulcerative colitis.

Thus, while consensus is that this enzyme excretion in the ulcerated colon represents a reaction to injury, it must be remembered that lysozyme can damage the colonic mucosa of some animals. This concept has shown that fresh paths of study are open.

Prepared for Modern Medicine

Antibiotics in Prophylaxis and Therapy

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THE successful use of antibiotics in the prophylaxis and therapy of infections of the lower gastrointestinal tract requires a familiarity with certain fundamental principles. Failure may result from disregarding any one of these principles.

• *Incorrect evaluation of the anatomy of an infection* is a common cause of failure. All infected areas must be carefully examined. The presence of pus is often not apparent at first because of a wide zone of inflammatory induration. While antibiotics will localize infection by controlling the surrounding cellulitis, success depends upon adequate surgical drainage. Infected areas must be repeatedly examined, since improvement and concomitant freedom from pain may mask the presence of a large accumulation of pus.

Parenterally administered antibiotics reach infected areas by way of the blood. Thus adequate concentration of antibiotics may be impossible to attain in devitalized tissue with impaired circulation. The tissue may serve as a nidus for spread of infection when antibiotics are discontinued.

• *The wrong choice of antibiotic* is not a frequent cause of failure. Use of the combination of penicillin and streptomycin and the advent of the broad spectrum antibiotics insure adequate coverage in most instances. In some infections, notably those due to *Staphylococcus aureus*, a broad spectrum antibiotic may have advantages. This is ascertained only by isolation of the etiologic organism and by sensitivity tests.

• *Inadequate dosage* is rarely a cause of failure.

The broad spectrum antibiotics are primarily bacteriostatic in action; final recovery depends upon active participation of the host. Withdrawal of antibiotic therapy before the host is able to cope with the residual organisms may result in exacerbation of the infection.

• *Development of resistance* by the infecting organism is always a consideration with streptomycin but is not a major concern with penicillin or the broad spectrum antibiotics.

• *Superinfection* with organisms resistant to the antibiotic employed must be kept in mind when exacerbation occurs during adequate therapy. Repeat culture will reveal the change in flora and the necessity for revision in therapy.

Antibiotics have been employed with success in the therapy of a number of specific infections of the lower intestinal tract. Intramuscularly administered streptomycin is apparently of value against anorectal tuberculosis. Symptoms may be controlled promptly, often dramatically. Superficial ulcerations may be expected to heal. In some cases sinus tracts close. Results in tuber-

culous enterocolitis are superior to those in pulmonary tuberculosis.

The most effective schedule for streptomycin has not been definitely established. The recent trend has been to use smaller daily doses, 0.5 gm., for forty-two to sixty days. The larger doses, 1 gm., have been administered every three days for the same period.

Since the acquisition of resistance by the tubercle bacillus is related to the duration of therapy, streptomycin should not be administered more than sixty days. To delay acquisition of resistance, up to 12 gm. of para-aminosalicylic acid is given orally each day. The enteric-coated tablet is advisable to avoid gastrointestinal irritation.

Salmonella enteritis has responded to chloramphenicol, but the results are not as striking as might be hoped. Despite defervescence and improvement in symptoms, relapse may occur if therapy is discontinued before the eighth day.

At least 5 effective agents are available against *Shigella* enteritis: sulfadiazine, polymyxin B, streptomycin, terramycin, and chloramphenicol. Since some dehydration is usually associated with this infection, the sulfonamides are not as safe to use as the antibiotics.

Aureomycin, terramycin, and bacitracin have been employed with success against amebic dysentery but are not effective in amebic liver abscess. The broad spectrum antibiotics appear useful against the virus of venereal lymphogranuloma.

Antibiotics are of value in the treatment of nonspecific infections of the lower gastrointestinal tract. Favorable results have been reported in idiopathic ulcerative colitis. While antibiotics may be of some use in controlling the septic features of the disease, more than a temporary beneficial effect is unlikely.

Sulfonamides and a combination of penicillin and streptomycin are valuable adjuncts in management of diverticulitis. The broad spectrum antibiotics may also be expected to give favorable results.

Antibiotics are valuable adjuncts to surgery for perirectal abscesses and fistulas. Blind reliance on antibiotic therapy without established surgical procedures will, however, usually result in failure.

Antibacterial agents have been successful in the prophylaxis of anticipated infections. Sparsely absorbable sulfonamides and steptomycin have been used to reduce the bacterial population in the colon after surgery, but terramycin and aureomycin appear to be more effective.

Terramycin is excreted in high concentration in the feces; oral administration of 3 gm. daily may result in virtual elimination of the aerobic flora in two days. Aureomycin in oral doses of 750 mg. every six hours has similar suppressive effects. However, this dose is likely to produce nausea, vomiting, and diarrhea—highly undesirable with abdominal surgery. Terramycin is less likely to provoke these side effects.

Sulfadiazine has been used successfully in prophylaxis of institutional outbreaks of bacillary dysentery and in control of carrier states. The broad spectrum antibiotics presumably would also be of value.

Prepared for Modern Medicine

Value of Routine Sigmoidoscopy

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MORE and more people now visit doctors or cancer prevention clinics for yearly examinations. Physicians are thus offered a greater opportunity for a thorough investigation of the patient. This may reveal unsuspected conditions which have produced no symptoms as yet.

No such examination can be considered complete without sigmoidoscopy. Unfortunately, however, not even all cancer detection centers perform sigmoidoscopies routinely. Yet, if it is important to make a roentgenogram of the chest or to insert a vaginal speculum, it is certainly just as important to examine the rectum and lower bowel.

The need for sigmoidoscopy is especially evident when one realizes that carcinoma of the large intestine is the second most frequent malignancy in males, the fourth most frequent in females. About 80% of intestinal cancers occur in the rectum or sigmoid, and 90% of these are visible by the sigmoidoscope. In many tumors, especially in the lower rectal segment, barium enema roentgenograms are often unrevealing and misleading. It is unfortunate that many physicians rely mainly on radiography in order to find or exclude lesions of the lower bowel.

Most cancerphobic or nervous patients are grateful to the doctor for a sigmoidoscopy, especially when he can report no abnormality. Thus, the physician's attitude is most important. As he perfects himself in the technic, he learns that sigmoidoscopy can be done in a relatively short time without harm, and with hardly any discomfort to the patient. His reluctance to suggest the examination will diminish once he sees how much information is obtained. Not only can he detect unsuspected sources of bleeding, such as polyps, hemorrhoids, ulcerative colitis, and malignancies, but he can better treat such painful or annoying conditions as fissures, fistulas, anal sinuses, hypertrophied papillae, or cryptitis.

Statistics show that 20% of persons 60 or older have adenomas of the large bowel. Of over 2,200 patients in a cancer clinic, 12% had adenomas. In the routine examination of 500 asymptomatic patients, Young was surprised to find that 5 had cancer (1%) and 44 had polyps (8.8%). Many observers believe that cancer of the bowel often develops on the basis of adenomas. Thus, about 1 out of every 10 patients examined routinely by sigmoidoscopy has premalignant lesions. One cannot stress too much the importance of removing adenomas of the lower bowel as a safe and certain means of preventing carcinoma.

The lower bowel is said to be "ignored" in routine physical examinations more frequently than any other easily accessible region of the body.

Prepared for Modern Medicine

Radiographic Examination of the Colon

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PAINSTAKING study is essential for the demonstration of lesions of the colon.

The barium enema examination requires considerable preparation, assiduous technic, and may be difficult for several reasons: [1] Proper cleansing of the bowel is essential and is frequently unsatisfactory; [2] no method obtains consistently adequate mucosal patterns; and [3] redundancy and overlapping of the loops of bowel may result in incomplete visualization of segments of the colon.

Minimal preparation for roentgen-ray study of the colon should consist of a fluid dinner, a laxative, and a tap-water enema the evening before the examination. The morning of the examination the patient takes 2 tap-water enemas and is permitted a light breakfast. Many clinics insist on a low-residue diet for four days and several enemas during this period. Patients may rebel against this rigorous regime but, when the importance of a cleansed bowel is explained, usually cooperate.

We have no method which produces constantly reliable postevacuation films with an adequate mucosal pattern. Use of tannic acid, which causes the bowel to contract and evacuate most of the contents, still remains superior to other methods. Complications may occur after the employment of tannic acid; many patients complain of cramps and a few have mild peripheral vascular collapse.

When tannic acid is not employed, large amounts of barium may remain, obscuring the mucosa. If the patient is permitted to wait until all the contents are evacuated, considerable time may elapse, allowing the retained barium to flocculate and precipitate. This is in part obviated when colloidal barium is employed.

Study of the mucous membrane is especially important in two conditions:

1] Diverticulitis may produce marked constriction of the bowel simulating carcinoma. The only reliable differential roentgen sign is the mucous membrane pattern. If the pattern is intact, the diagnosis of diverticulitis is favored; if destroyed, carcinoma is likely.

2] The earliest change in ulcerative colitis may be thickening and distortion of the mucosa. Increased secretions may simulate these alterations, and reexamination may be necessary for confirmation.

Sometimes polyps may be easily identified on the evacuation study. The absence of this identification, however, does not dismiss the possibility of the diagnosis. Small polyps can easily be hidden in the contracted bowel after the use of tannic acid.

Redundancy of the loops of bowel may cause difficulty in visualizing the entire colon. Fluoroscopy, spot roentgenograms as the barium enters the colon, and compression will in most cases be sufficient to overcome this complication. Routine spot films of the sigmoid are most important as, except for the rectum, the great majority of lesions of the colon occur in this area.

Recently, a constricted segment in the rectosigmoid has been demonstrated as the cause of one type of megacolon—Hirschsprung's disease. This stenotic segment cannot be visualized unless small amounts of barium are used and spot films taken in the marked oblique or lateral positions. If large amounts of barium are introduced into the colon, the greatly redundant sigmoid may obscure the lesion.

This is also true of short constricted segments of carcinoma in this region. Occasionally this type of lesion will produce marked retention of stool above it. A column of stool at any point, associated with a well-cleansed bowel distal to the area, is suggestive of a constricting lesion. Reexamination with special attention to the junction of clean and stool-containing bowel will usually reveal a lesion.

With marked constriction, especially proximal to the midtransverse colon, care must be taken not to force too much barium proximal to the lesion, because perforation of an attenuated right side of the bowel may occur. Also, if a preliminary cecostomy is necessary, the presence of barium may prevent this palliative procedure.

The incidence of polyps increases with age. Their detection is at times simple and, in other instances, very trying, because of secretions, improper preparation, and redundancy of the bowel. Clinicians and roentgenologists must reexamine every patient who has persistent red blood in the stool which cannot be attributed to a demonstrable lesion. Every suspicious polyp should be confirmed by reexamination.

To facilitate the finding of polypoid lesions, thorough cleansing of the bowel is necessary. In a properly prepared colon any small defect is suggestive of a polypoid growth. This possibility should be substantiated on air injection films. Most smooth polyps are benign; however, they are occasionally malignant. The finding of a pedicle usually, but not always, excludes malignancy at the base.

Polyps usually produce some radiopacity, but sometimes they have little radiopacity so that differentiation from a diverticulum situated on the posterior wall of the bowel is difficult. In the filled bowel a diverticulum may be radiopaque and a polyp may be radiotranslucent. Films made in the marked oblique position will ordinarily demonstrate the extraluminal position of the diverticulum.

A dimpling or small scalloped defect in the contour of the bowel suggests the presence of a pedicle. Comparison films are valuable in confirming the presence of the pedicle and polyp. If reexamination is done for confirmation, compression is feasible so that the exact area may be studied.

Prepared for Modern Medicine

Transsacral Block

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IN anal and rectal operative procedures, the mental and physical status of the patient as well as the requirements of the surgeon should influence the choice of anesthesia. The decision is also affected greatly by the position in which the surgeon wishes the patient placed.

The prone position is favored by many proctologists. Exposure is facilitated by breaking the table. Even conscious patients in this position have a marked decrease in respiratory excursion. Limitation of respiratory activity by pressure on the thorax and abdomen increases the hazards of general anesthesia.

If general anesthesia is to be employed, the insertion of an endotracheal tube is advocated. Failure to do so before the patient is placed in the prone posifion increases the likelihood of undue delay in treatment for acute respiratory obstruction from laryngospasm. Because assisted respiration may be necessary to offset respiratory depression when the level of anesthesia is adequate to provide muscular relaxation, a patent airway is essential.

It may be argued that insertion of an endotracheal tube is unwarranted for a contemplated minor operative procedure. It cannot be overemphasized that there is little relationship between the degree of operative hazard and the degree of anesthetic danger in operations involving the anus and rectum. Anesthetic procedures accompanied by loss of consciousness and relaxation of major portions of a patient's musculature increase the incidence of atelectasis.

Rather than face the multiplicity of hazards associated with general anesthesia, transsacral block is warranted, provided the anesthesiologist is prepared to accomplish it with dexterity and dispatch. Loss of sensation will be limited to the operative area. Muscular relaxation of the anal sphincters will be maximal. Control of respiration will be voluntary and subject to augmentation upon request. With adequate preoperative medication, apprehension can be allayed. Should nausea occur, 0.1 or 0.2% Sodium Pentothal may be administered intravenously to promote drowsiness and amnesia.

Some contend that spinal anesthesia is preferable to transsacral block because it is easier to produce. Although insertion of a needle at the third lumbar interspace through the dura is usually easy, limitation of anesthesia to the operative area cannot be assured, particularly for operations lasting more than one-half hour. The incidence of nausea and vomiting during operation will be higher, decrease in systolic blood pressure more likely, and chances of postoperative headache much greater with spinal anesthesia.

Although transsacral block ap-

proaches the ideal for anal and rectal procedures, contraindications exist. Thorough inspection and palpation of the sacral and coccygeal area will prevent complications due to insertion of needles through an infected field. Damage to tissue from a caudal needle in the presence of a bony deformity can be avoided. It is sometimes necessary to omit insertion of the caudal needle and employ individual blocking of the second, third, and fourth sacral nerves on each side.

The history of idiosyncrasy to a local anesthetic agent must always be given credence. Intradermal infiltration of 0.1 cc. of a weak solution will reveal the sensitivity.

Choice of agent rests with a 1% solution of procaine hydrochloride with 1:40,000 Cobefrin added, or a 1% solution of metycaine with 1:200,000 epinephrine, or a 0.1% solution of pontocaine hydrochloride with 1:200,000 epinephrine. The practice of employing the weakest effective concentration of the least toxic drug available is a good one. For that reason, procaine hydrochloride is advocated. A dose of 1 gm. in 100 cc. of normal saline should not be exceeded; usually 60 cc. produces anesthesia for two hours.

Every anesthesiologist should adhere to necessary safeguards. Hands and arms must be scrubbed, and gloves changed for each patient. The operative field should be thoroughly prepared and sterile draping completely outline the area of injection. Anesthetic solution is freshly prepared for each patient. Saline in normal physiologic concentration or distilled water may be employed. The solution should be warm on contact with the forearm. Unless a vasoconstrictor is added, unduly rapid adsorption may produce untoward reaction. The solution should be discarded if brownish-yellow coloration follows the addition of Cobefrin or pink coloration follows epinephrine.

A fine caliber needle is used to raise each wheal, the bevel held flat against the skin. Bone should be approached gently. With the needle in a fixed position, aspiration is attempted before more than 0.25 cc. of solution has been injected. If blood is aspirated, the position of the needle must be changed.

Not more than 5 cc. should be injected through a caudal needle before checking for production of spinal anesthesia since the dura might have been punctured. Ordinarily, the lower reflection of the dura is above the level of a line drawn between the left and right second sacral foramens. If spinal fluid is aspirated, transsacral block should be abandoned in favor of an intradural technic. Injection of 50 mg. procaine in 2 cc. of spinal fluid or normal saline produces satisfactory anesthesia.

An attendant should check and warn of any decrease in systolic pressure or change in pulse rate. Injection should be stopped if pallor, perspiration, nausea, or vomiting occurs. Cyanosis or muscular twitching, which is considered prodromal to a convulsion, warrants the administration of oxygen under intermittent positive pressure. A rapidly acting soluble barbiturate is essential to relax the thoracic cage musculature.

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Tumors of the Rectum and Colon

Adenomas

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SMOOTH adenomas, 1 cm. or more in diameter, are usually deep red or dusky red in color and slightly nodular in appearance. Small tumors are ordinarily the color of normal rectal mucosa. The body of the tumor consists of relatively tight lobulations, being round or oval in shape or having quite large branching divisions.

In contrast, the villous adenoma is about the color of normal mucosa or even paler and more translucent, unless infection produces reddening. The tumor may appear as a smooth, soft, raised area or have a loosely lobulated appearance. It secretes large amounts of mucus. This tumor is very often multiple, a large "parent" tumor with one or more smaller tumors closely adjacent.

The villous adenoma is usually found in the rectum or in the rectosigmoid area, occasionally the sigmoid or cecum. The smooth adenoma appears most often in the rectum or sigmoid, but is also quite common in the remainder of the colon.

The etiology of both of these tumors is unknown. That their etiology may differ is suggested by several points of variation. First, the smooth adenoma does not tend to have smaller adjacent adenomas. A second difference is that the smooth adenoma has little tendency to recur after removal, while the villous polyp very frequently recurs either at the site of removal or in the immediately adjacent mucosa.

In this respect as well as in the formation of adjacent tumors, the villous polyp closely resembles the condyloma acuminatum. These facts have suggested to the writer that the exciting factors in the formation of villous polyps and of condyloma acuminatum may be the same or at least similar, the villous adenoma being the result of the excitant when applied to the mucosa of the bowel, and the condyloma acuminatum being the result when the excitant is applied to the squamous epithelium of the anoderm or perianal skin.

Smooth or villous adenomas usually bleed but rarely profusely. Because of their size, the adenomas may produce troublesome symptoms, but the most serious threat is malignant degeneration. Malignant changes are most frequently seen in large adenomas of long duration but may be found in small, innocent-appearing tumors. For this reason, adenomas, regardless of size, should be eradicated as soon as discovered.

Small adenomas are usually symptomless and are found on routine proctoscopic examination. At most, a small amount of blood or mucus may be seen. In the rectum, large tumors may prolapse with defecation; in the colon, they may produce

colicky pain or symptoms of intussusception.

Visualization through the proctoscope is the most accurate method of examination for lesions of the rectum, rectosigmoid, or lower sigmoid. Above this level we must rely on roentgenologic examinations. This method is by no means as accurate as visualization but is the best available.

In general, tumors 0.5 cm. or larger in diameter can be demonstrated on roentogenograms, but smaller growths are seldom visualized. The demonstration of small tumors presupposes an examination by an expert roentgenologist upon a properly prepared patient. Search for small adenomas should not be entrusted to the inexperienced, since such attempts are almost certain to be unsuccessful and both physician and patient will be lulled into a sense of false security by the negative report.

All polyps should be eradicated as soon as possible. If feasible, those within reach of the proctoscope should be removed in entirety since one part of the tumor may show malignant change while another does not. If only a portion is extirpated, the area of malignancy may be missed.

Small tumors may be removed with one snip of the biopsy forceps and the base fulgurated. Larger tumors below the peritoneal reflection may be removed by fulgurating the base of the tumor, by an electric snare, or by ligating the pedicle. In the case of a tumor with a rather large pedicle, I prefer to transfix and ligate the pedicle and then remove the tumor. In any event, the entire tumor and the portion of the adjacent pedicle should be removed for microscopic study. If the tumor is too large for adequate removal by this method, a posterior Cripps incision should be used.

If the tumor lies above the peritoneal reflection but within reach of the proctoscope, extirpation of the entire tumor and pedicle may be impossible except by the abdominal route. If the tumor has a long, thin, attenuated pedicle, the surgeon may simply do a biopsy through the proctoscope and fulgurate the remainder of the tumor. If a pedicle is lacking or is short and broad, removal by the abdominal route is safer and better. This applies to all but the smallest tumors which have a superficial mucosal attachment.

When the adenoma or adenomas lie above reach of the proctoscope, several courses are open. For a single adenoma with an ample pedicle, colotomy with ligation of the pedicle and removal of the adenoma is adequate. In the case of a large tumor or one with a short pedicle or when several adenomas are situated closely together, segmental resection is advisable.

When the bowel is opened, a sterile proctoscope should be passed both caudad and cephalad to locate any adenomas which may not have been demonstrated in the roentgenograms. A frozen section should be done as soon as the tumor is removed. An accurate diagnosis is not always possible from a frozen section, but is worth trying. If malignant change is demonstrated or the proctoscope has shown other adeno-

mas, the surgeon may wish to revise his plan of procedure.

When the roentgen examination has revealed 2 or more adenomas in widely separated portions of the colon, it must be decided whether a multiple colotomy, segmental resection, or colectomy with anastomosis of the ileum to the rectum or lower sigmoid is advisable. There can be no rule of thumb. In general, with no more than 2 widely separated adenomas and a favorable family history, my inclination is to do a double colotomy, particularly for an older patient or for those who are not first-class surgical risks. With 3 or more widely separated adenomas, I am inclined toward colectomy with an anastomosis of the ileum to the terminal portion of the sigmoid, especially in a young patient. Final decision must rest upon the individual, his age and physical condition, the family history, and the technical difficulty of the procedure.

In the familial type of adenomatosis or polyposis, early colectomy is the only procedure to consider.

Patients who have had adenomas removed require periodic rechecks.

Lipomas

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ALTHOUGH a relatively rare disease, lipoma of the colon and rectum is the second most common of the benign tumors encountered in the large bowel.

The tumor occurs with about the same frequency in males as in females. The average age at which symptoms are reported is 54 years. The most common site of origin is the cecum.

Lipomas may be divided into two types according to the site of their origin: [1] submucous and [2] subserous. The tumor is characteristically well circumscribed and frequently pedunculated. Rarely the tumor may be multiple.

No clinical syndrome is pathognomonic of lipoma of the large bowel. The chief symptoms are those of intestinal obstruction produced by the tumor mass or by a complicating intussusception. The size, location, and behavior of the tumor determine the onset of symptoms, which are mainly due to a combination of effects: disordered peristaltic activity owing to the interference of the intrinsic nervous mechanism of the bowel wall, ulceration of the mucosal surface with or without hemorrhage, circulatory changes incidental to the intussusception, with associated edema, congestion, infarction, necrosis, and at times gangrene.

The clinical features are: [1] vague intestinal complaints due to intermittent hypermotility of the gut, a tumor being demonstrated by roentgenograms, [2] a chronic course, often over a period of years with recurrent partial obstruction, and [3] an acute course, hours or days, terminating in obstruction, due for the most part to intussusception.

Because of its occurrence during the so-called cancer age, the similarity of the symptoms to those of obstruction from carcinoma, and the absence of a characteristic defect

on roentgen examination, lipoma of the colon is rarely diagnosed preoperatively. In cases of suspected pathologic condition of the colon with a long history of recurring attacks of pain, constipation, bloody diarrhea unassociated with loss in weight or with cachexia, a benign tumor should be suspected.

Occasionally, the tumor may be palpable, either abdominally or rectally. Roentgen studies are helpful; they may show an encapsulated submucosal tumor. Because of the very high fat content, the mass may be relatively radiopaque. In the distal large intestine, proctoscopic or sigmoidoscopic examination may show a soft, lobulated tumor, with a surface of yellowish tint.

Since lipomas of the colon and rectum are benign growths, extensive lymph node dissection is not necessary as with carcinoma. However, the tumors are often of large dimensions and the presence of malignancy is difficult to assess accurately. Therefore, right colectomy or segmental resection, according to the site involved, is advisable.

Endometriosis

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BEFORE any pelvic surgery is undertaken for possible endometriosis, proctosigmoidoscopic examination is advisable. The procedure may reveal intraluminal findings which help establish a diagnosis of endometriosis and show the extent of such involvement and the degree of bowel impairment.

Invasion of bowel proceeds from the serosa toward the mucosa. Many serosal implants never attain sufficient size to be discernible by examination of the mucosal surface.

Only infrequently does a patient present herself primarily for proctoscopic examination because of symptoms that finally prove to be the result of endometriosis. Prior consultation regarding symptoms referable to the pelvis usually has been sought. Examination is ordinarily requested to help explain the nature of a mass palpated on digital examination of the rectum or vagina.

Often the mass is in the rectovaginal septum or at the level of the peritoneal reflection. Not infrequently the sigmoid colon is the site of involvement. When the nodule is discovered, the immediate questions are: Is the lesion malignant? Is it a primary lesion of the bowel?

The nodule in the rectovaginal septum is likely to be moderately firm, not rigidly fixed or extremely tender. The overlying mucosa is ordinarily intact and inspection gives little or no evidence of an underlying lesion.

Involvement at or above the peritoneal reflection often makes proctosigmoidoscopy difficult and may make visualization of the bowel above the rectosigmoid impossible. Examination may be painful during or near a menstrual period. Ulceration of the mucosa may be evident, but not usually. A dark, bluish discoloration may be visible through the swollen, boggy, fixed mucosa of the anterior bowel wall. Often the only impression gained is that an extrinsic bowel lesion is present.

If one can visualize the entire le-

sion, great difficulty seldom occurs in distinguishing an endometrioma from carcinoma of the bowel. Confusion is most likely to arise when a lesion is found involving the bowel at the rectosigmoid or above and the scope cannot be passed high enough to see any mucosal change. Then, regardless of all other evidence of endometrioma, cancer cannot be dismissed as a possible diagnosis. This situation justifies laparotomy, preoperative preparation of the bowel being done just as though surgery of the colon were contemplated.

The underlying principle which governs regression of endometrial tissue is the termination of ovarian function. Treatment demands individualization. A single nodule below the level of the rectosigmoid should receive conservative treatment as long as possible. Local excision may result in a fistula.

An endometrioma found by sigmoidoscopy and resulting from invasion of the bowel by an adhering involved contiguous organ is difficult to differentiate preoperatively from an endometrioma primary in the bowel wall. The pelvic structures are fixed and immobile because of the disease. More often, bowel is involved by adherence and invasion in old, advanced disease; when this occurs in young women, for whom preservation of ovarian function is desired, a difficult decision is imposed. The likelihood of injuring the bowel is great. If the bowel wall is actually invaded, separation of the bowel should not be attempted unless resection of the segment has been planned as a possible eventuality.

Intestinal lesions seldom require resection; however, involvement of such extent and degree that bowel function is impaired or ulceration of the bowel mucosa has occurred may have made termination of ovarian function advisable. Should the lesion be in the sigmoid, sufficiently discrete, and at a level where good opportunity exists of reuniting the bowel after resection, resection should be the procedure of choice. Castration should be done when lesions are situated in the rectum, rectosigmoid, or at any level where, because of the location or the accompanying dense, massive adhesions, continuity of the bowel would be sacrificed or greatly jeopardized by resection. The need for a temporary proximal colostomy depends upon the degree of obstruction.

Lymphomas

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LYMPHOMA is a benign lesion composed of lymphatic tissue. The lesions are not common, but may develop in the anal canal or rectum regardless of the age, sex, or physical status of the patient.

Lymphomas should receive consideration in a differential diagnosis whenever a circumscribed palpable mass resembling a thrombotic internal hemorrhoid is found in the anal canal or a polyp originating from an enlarged papilla of Morgagni. When in the rectum, lymphomas may be felt during palpation, but are most commonly discovered during routine

proctoscopy. The lesions are ordinarily demonstrable as discrete submucosal nodules, and are, in reality, enlarged submucosal lymph nodes.

The diagnosis, except in submucosal rectal lesions, is rarely made until the specimen is studied. Since the prognosis, based on the treatment, of any lesion such as lymphoma, carcinoid, adenomatous polyp, and lymphosarcoma and sarcoma, is radically different, adequate initial removal and pathologic study are of paramount importance.

Ordinarily a lymphoma is an aggregation of hyperplastic cells with follicles and germinal centers enclosed in a stroma of connective tissue. Mitotic figures remain well within the limits of the germinal center. A capsule of connective tissue usually circumscribes the tumor mass. At times numerous lymphoid follicles are encountered which may be so extensive that the connective tissue capsule is pushed aside, the muscularis mucosae is destroyed by the pressure of the growth, lymphoblastic cells are scattered about the periphery of the growth, and the rectal mucosa may show pressure atrophy and surface erosion.

The pathologist should recognize these features as being a nonmalignant pattern of growth, for the clinical behavior of these tumors establishes their benign nature. One may be perfectly safe in assuming the benign nature of these lesions if no evidence is found of an associated lymphoid disease and the patient's blood studies are not abnormal.

In the anal canal, the circumscribed nodular tumor is covered by squamous epithelium and may appear within the lower portion of the canal as a pale fibrous lesion approximately 0.25 to 0.5 cm. in size. Aside from a sense of protrusion or of something in the anus, this lesion may be asymptomatic.

Lymphomas just above the mucocutaneous junction may resemble an enlarged papilla of Morgagni. If pedunculated, they may prolapse through the anus or ascend into the lower rectum. A variable degree of inflammatory reaction may be seen.

Local excision is sufficient to effect a cure.

In the rectum, the tumor may be a discrete firm submucosal nodule, freely movable, and without visual evidence of inflammatory reaction except for occasional development of surface thinning or erosion of the mucosa. This sessile pea-sized tumor, 0.25 to 0.75 cm. in size, is the most common lesion.

Treatment at the initial visit is indicated, for the lesion must be differentiated from carcinoid, sarcoma, lymphosarcoma, fibroma, lipoma, leiomyoma, and inflammatory nodules caused by foreign body reaction.

The treatment of these submucosal nodules consists of excision, preferably with a biopsy forceps that will remove the tumor mass relatively intact, unaltered by crushing or electroresection, so that the pathologist can render an accurate diagnosis. Various instruments used for surgical electroresection are suitable. Sometimes elliptic excision is done.

The exposed muscular defect is best treated by light electrocoagulation to control hemorrhage. Healing is rarely attended by any complica-

tions. Adequate follow-up is desirable.

Lymphoma that assumes the form of a polyp with a smooth surface or a shaggy surface is less common than the nodular lesions, but must be differentiated from true adenomatous polyps. Excision may be done by electrosnare when the pedicle attaches to the mucosa or by clamping the pedicle and transfixing suture of the base. The entire tumor mass should be removed intact for pathologic study.

Epidermoid Carcinoma

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THE anal canal is lined by stratified squamous epithelium and, at its more cephalad margins, by a transitional type of epithelium. Anal epidermoid carcinoma may be of either basal- or squamous-cell type.

When the two types coexist in the same neoplasm, the general characteristics and course are those of the squamous-cell form. Epidermoid carcinoma arising in the rectum is a squamous-cell neoplasm.

Basal-cell type

Incidence—Few cases of basal-cell type were described up to 1949. Since then numerous isolated case reports have appeared. About 1.5% of all anal epitheliomas are basal-cell carcinomas. The remainder are of the squamous-cell variety.

Diagnosis—The neoplasm often begins as a nodule in the dermis, later ulcerating. The edges are rolled, indurated, and sometimes red. The crater is usually clean.

The neoplasm is commonly confused with a nonspecific anal ulcer, ulcerated varicosity, lymph node, or small abscess. Sometimes biopsy does not at first reveal the nature of the lesion. Therefore, suspicious ulcerations should be subjected to repeated microscopic examinations. Excision of the entire lesion for histologic study is usually the best method for establishing the diagnosis.

Pathology—Basal-cell tumors may arise in the anal canal or externally at the anal verge; they do not occur in the rectal mucosa. They do not usually enter the blood stream or lymphatics, but do invade the surrounding tissues.

Treatment—Lesions which have not yet invaded the sphincter muscles respond best to local wide excision followed by irradiation. Large lesions with invasion of surrounding structures usually require abdominoperineal or perineal excision of the rectum, although tumors of advanced degree, with and without sphincter-muscle involvement, are reported to have been treated successfully in a few instances with irradiation alone, preserving sphincteric control.

Squamous-cell type

Neoplasms of the squamous-cell type usually arise from the epithelium of the anus and may then invade the rectum by contiguous growth across the dentate line. Less than 12 cases are recorded in which squamous-cell carcinoma has arisen *de novo* from the rectal mucosa.

Incidence—Reported incidence va-

ries from about 2 to 6% of all carcinomas of the rectum and the anus. The tumors are slightly more common in women, in contrast to rectal adenocarcinomas, which are more frequent in men. Epidermoid carcinomas are frequently superimposed on benign anal conditions, having been reported in hemorrhoids, anal fissures and fistulas, and lymphovenereal strictures. Chronic irritation is thought by some to be a predisposing factor.

Location—In women, the lesion is found 4 times more frequently in the high anal canal than in the lower anus. Occurrence of the lesion in men is evenly distributed throughout the anal canal. The carcinomas farther up in the anus usually display a higher histologic grade of malignancy than those situated at lower levels.

Pathology—The usual beginning is a nodular elevation or an indurated plaque which becomes fixed and ulcerated. The edges are rolled and the crater is often necrotic and covered by a crust. Squamous-cell carcinoma, while more invasive locally, is slower growing than rectal adenocarcinoma. Extension may occur by contiguity: superficially along the perineum to the scrotum or vulva; or deeply into the anal sphincter muscles, prostate, and rectovaginal septum. Spread is also common through lymphatic pathways, but blood stream dispersion is rare.

Metastases are less common and less widespread than with adenocarcinoma of the rectum. The liver is rarely involved. Lymphatic spread may occur anteriorly to the perineal and inguinal nodes; posteriorly to the perianal, ischiorectal, and retrorectal nodes; and laterally to the levator and coccygeus muscles, pelvic peritoneum, prostate, base of the bladder, cervix, and broad ligaments. Cephalad lymphatic spread to the aortic nodes is rare.

Diagnosis—Pain, often excruciating, is an early symptom in almost 50% of cases. Tenesmus is common when the sphincter muscles are involved. There is often pronounced skin irritation produced by bloody discharges. Bleeding is present in about half of cases. An anal lump may be the only presenting symptom.

The duration of symptoms before the diagnosis is made is usually longer than with rectal adenocarcinoma, varying from one month to two years. Operations for anal conditions, such as hemorrhoids, fissure, or abscess, immediately preceded the diagnosis of squamous-cell carcinoma in about 20% of cases, indicating the frequency of error in diagnosis. Acute abscesses were associated in 10% of cases.

Treatment—Opinion has varied through the years concerning the best method of management. The great preponderance of reports, especially recently, condemns irradiation as a sole method of therapy and maintains that the heretofore poor survival rates with squamous-cell carcinoma are due to deferment of radical surgery.

The plan of therapy recommended by those with the largest experience consists of [1] radical extirpation of the rectum and anus by either abdominoperineal resection or the combined colostomy and perineal excision of Lockhart-Mummery, [2]

bilateral inguinal node dissection (not favored by all), and [3] irradiation as an added safeguard (omitted by some). Under this three-stage plan a five-year survival rate of at least 30% can be anticipated.

It is generally accepted that radical resection should be employed for large lesions, for tumors which have extended to the sphincter muscles, for those with inguinal node involvement, and for lesions above the anal verge. However, for small localized external lesions at the anal verge, without inguinal node involvement, external radiation is still used by some careful observers who report long-term survival rates.

Rectal Cancer

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IN removal of rectal cancers, many varieties of operations have been attempted to avoid what patients often unjustifiably most fear—a colostomy. Preservation of the anal sphincters has been tried by means of low pelvic anastomosis, pull-through operations, extraanal anastomosis of the Weir type, implantations in which the sphincters are preserved but the mucosa is excised, and other measures.

When one talks of operations to remove cancer of the rectum and preserve the sphincter versus abdominoperineal removals with colostomy, the situation can become quite confused, since many factors are involved, such as:

How fat is the patient? In the short, fat man with a large lesion and a difficult pelvis anatomically, it is hard, sometimes impossible, to obtain a good anatomic exposure.

What is the patient's ability to withstand a trying procedure?

Where is the lesion in relation to the peritoneal-pelvic reflection? Recurrences are more frequent in lesions below the peritoneal fold than in those within the peritoneal cavity.

How far has the lesion extended laterally along the lateral ligaments and the middle hemorrhoidal artery?

How fixed is the lesion?

What grade of malignancy is the cancer? This is the chief consideration. Any limitation in the extent of removal of lesions with high-grade malignancy is more disastrous in diminishing the five-year survival rate than is limitation with lower grades of malignancy. The higher the grade of malignancy, the greater is the occurrence of downward and lateral spread and the greater the need for wide and radical excisions of upper lymphatics and for wide lateral excision of lateral ligaments and levators.

One of our objections to sphincter-preserving operations is that, with this procedure, it is almost impossible not to lean toward limiting the radicalism of the operation. We cannot conceive of a surgeon doing such a procedure, and concerned with the blood supply to the colon, not inclining in the direction of caution and being a little handicapped by the need to preserve an adequate length of colon to reach the perineum. We have often found it so difficult to do even the Miles abdominoperineal procedure that to add the technical step of preservation of the sphincters would in some cases make it an exceedingly trying operation not only for us but for the patient.

We would not feel happy to do a less radical procedure than is possible

with abdominosacral removal of a malignant lesion of the rectum and then have the pathologic report of the paraffin sections show that the lesion was of high-grade malignancy. We prefer routinely to do an operation which will leave us feeling that we have given the patient the best chance of surviving five years, no matter what the grade of malignancy, what the location of the lesion in relation to the sphincters, how far the growth has extended laterally along the ligaments, or how fixed it is to surrounding structures, since only 8 to 9% of the patients surviving over five years will be lost in a ten-year follow-up.

In spite of the statements that the bowel can safely be transected 4 to 5 cm. below a carcinoma of the rectum, we would not be happy to have done such a close transection if postoperative examination showed that the carcinoma had penetrated the muscularis, in which case it could break out literally in any direction.

We prefer abdominosacral removal of the rectum by the Miles type of procedure and a colostomy for all patients with cancer of the rectum in the curable stage, since this procedure fulfills the ideal requirements of a cancer operation. It permits the high removal of the mesenteric lymph nodes to the level of the point where the jejunum becomes retroperitoneal, if necessary. It permits wide removal of the lateral ligaments and extensive removal of the rarely but occasionally involved levators.

Much of the debate concerning the value of operations aimed at preserving the anal sphincter would be clearer if this operation were discussed with more qualifications as to when it is indicated. Much of the discussion of primary anastomosis for intraperitoneal lesions of the low sigmoid and rectum is also needlessly confusing. The question as to when a primary anastomosis should be made in the pelvis is determined largely by the level at which the lesion is located, whether above or below the peritoneal reflection, and how radically it can be removed, with the decision always in favor of a radical abdominoperineal resection when there is any doubt as to those qualifications.

We favor abdominosacral resection for almost all cancers of the rectum not only because it is a more radical operation but also because it entails fewer complications.

To preserve anal sphincters without bowel control is to do an operation which inclines to be less radical and to be followed by more complications, yet does not offer the same chance for five-year survival that the more radical procedure does.

Preservation of the anal sphincters has little to offer over abdominosacral removal and colostomy unless it preserves the sensory stimuli that warn patients of the desire for defecation. Whether this sensation resides entirely within the rectal mucosa or is related also to the rectal muscularis is unimportant; unless rectal mucosa is preserved for a short distance above the sphincters, this function of the rectum will not be preserved.

The sensory apparatus of rectal mucosa is so delicate and discriminatory that it permits an individual to distinguish safely between the desire

to expel fecal material and the desire to expel gas. Unless such stimuli and warning sensations can be preserved, an operation that implants the colon in the perineum has little if anything more to offer than does a perineal colostomy. Of all the places to establish a colostomy or, even more so, an ileostomy, the worst is in the perineum between the gluteal folds, a region predisposing by gravity in the upright position to leakage and, because of its infolding gluteal skin, difficult to care for. If a sphincter-preserving operation will hold solids but not liquids, it has little if anything to offer over a well-established colostomy, which will do the same.

We do primary anastomoses only on carcinomas of the colon which are sufficiently intraperitoneal so that a wide and adequate length of stump is available for a safe anastomosis, not only from the point of view of the suture line but the distance from the lesion. In all lesions below and immediately above the level of the pelvic-peritoneal reflection, we unhesitatingly do abdominosacral removal with a colostomy.

It is still too early to say, but having experienced for many years the difficulties of removing large and adherent rectal carcinomas, the difficulties with heavy-set individuals, the added technical difficulties of having an adequate amount of colon to pull down into the pelvis without losing the blood supply, the constrictions of preserved sphincters on segments of bowel pulled through the sphincters with the resulting slough, the ineffectiveness of sphincters which have been cut, and the infections and hemorrhage which add to the complications of this operation, I am convinced that, were it possible accurately to compare a large series of cases of pull-through and sphincter-preserving procedures with Miles resection and a colostomy, these newer procedures would be found to have resulted in more deaths and complications than abdominoperineal removal with colostomy and to have lowered five-year survival rates. The latter operation has stood the test of time.

Carcinoma of Colon

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FAILURE to entertain the possibility that colonic carcinoma may be the source of the patient's symptoms is the cause of much delay in diagnosis of colonic neoplasms. It must continually be reemphasized that carcinoma of the large bowel is common, frequently insidious, and variable in its manifestations.

Diagnosis—Malignant tumors of the colon may be considered basically as [1] polypoid, producing symptoms as a result of projection into the intestinal lumen, [2] infiltrative or scirrhous, invading and narrowing the wall of the bowel, or [3] ulcerative, producing inflammatory alterations in and around the growth either by bacterial migration or slow perforation. Combinations of these three types are common and probably occur more frequently than the "pure" type.

The *polypoid* lesions are subject to

abrasive and ulcerative action of intestinal peristalsis. As the result of these changes, intestinal bleeding is quite likely to occur. In mobile segments of the bowel, polypoid tumors may also serve as the head of an intussusceptum.

The purely *infiltrative* type of carcinoma in classic form, the annular or so-called wedding-ring constriction, causes obstruction as the result of rigid encroachment upon the lumen of the bowel. The symptoms vary from increasing constipation and abdominal discomfort in the early stages, through bouts of colic frequently accompanied by borborygmi, to an apparently sudden, complete intestinal obstruction.

The *ulcerative* type of neoplasm causes an inflammatory reaction in the pericolonic tissues with resultant local peritonitic symptoms. In the proximal right colon, the symptoms may suggest appendicitis or appendicular abscess and in the vicinity of the hepatic flexure have been mistaken for acute cholecystitis. At the splenic flexure, a subphrenic inflammation may occur with secondary sympathetic effusion in the pleural cavity.

In the sigmoid, the manifestations may be confused with those of diverticulitis, and the differentiation at times is very difficult. Prolapse of such a loop of sigmoid into the pelvis, in a woman, not infrequently is diagnosed as a lesion of uterine or adnexal origin. In men, such lesions of the sigmoid and rectosigmoid may become adherent to the peritoneum covering the superior and posterior wall of the urinary bladder. The resultant perivesical inflammation may produce urinary symptoms which bulk larger in the patient's sensorium than the intestinal ones. Thus, the possibility of an underlying colon neoplasm should be considered in cases of obscure or atypical inflammation in the abdominal quadrants and in the pelvis.

In another group of cases, the presenting symptoms may best be designated as irritative. These consist of general bowel consciousness; transitory episodes of abdominal cramps, diarrhea, or pseudodiarrheal movements; feeling of incomplete defecation; and mucoid or mucopurulent rectal discharge.

The great difficulty is often that of determining whether the symptoms are organic or functional. Persistent exacerbation of previous disturbances or appearance of such symptoms *de novo* requires diligent investigation; accompanying blood in the stool is, of course, of even greater significance.

If the symptoms just outlined seem to indicate a colonic neoplasm, four means of investigation help verify or disprove the diagnosis: [1] systematic, careful abdominal palpation, [2] digital rectal and vaginal examination, [3] sigmoidoscopy, and [4] roentgen examination of the colon with a barium enema. The last three steps are self-explanatory; the first deserves some comment.

Insistence upon a careful systematic abdominal examination may be objected to as emphasizing the obvious, or as unrevealing except in late stages. Neither of these objections is valid. The author has repeatedly found that a mass is palpable when radiologists refuse defi-

nitely to commit themselves on the presence or the nature of a lesion.

Palpation of a mass is not necessarily evidence of an advanced state of a neoplastic lesion. The malignancy may be only one of the components of such a tumor. Inflammatory changes in the bowel wall, in adjacent epiploid appendages, and in adherent adjacent viscera may contribute a sizable proportion of the mass. Fecal contents and intestinal spasm directly proximal to the lesion may also be components of the palpable mass. The accuracy of palpation can be enhanced by bimanual palpation in the flanks and the pelvis and by having the patient breathe deeply.

The condition which most frequently causes difficulty in differential diagnosis is sigmoid diverticulitis. In the overwhelming number of cases, such differentiation is fairly easy. However, in a number of cases of diverticulitis with secondary inflammatory and fibrotic changes in the wall of the bowel, differentiation clinically or even at laparotomy is almost impossible. In any event, such cases usually require operative intervention.

Inflammatory conditions around the ileocecal region, whether caused by appendicitis or regional ileitis, may give rise to difficulties. These conditions also require operation and in cases of doubt the condition is best considered as neoplastic. Colitis, general or localized, and colonic amebiasis can usually be differentiated easily. The incidence of carcinoma in chronic nonspecific colitis, even of the "healed" type, is considerable.

Operative procedures—The preoperative preparation takes about a week and consists of rehabilitation by replenishment of protein, electrolytes, and vitamins, correction of anemia by blood transfusions, administration of sparsely soluble sulfonamides and antibiotics, and thorough cleansing of the colon.

Colonic surgery is now characterized by increasingly extensive resection, the abandonment of routine multiple-stage procedures, and the substitution of primary resection and anastomosis.

In lesions of the cecum, the ascending colon, and proximal portion of the transverse colon, the operation consists of a right hemicolectomy and the resection of about 1½ ft. of terminal ileum together with the corresponding mesentery and mesocolon. The continuity is reestablished by ileotransverse colostomy by a side-to-side or end-to-side anastomosis.

In lesions located between the left third of the transverse colon and the upper portion of the sigmoid, resection is carried from the transverse colon to the midsigmoid with reestablishment of continuity by end-to-end anastomosis between transverse colon and sigmoid. In lesions of the midtransverse and midsigmoid zones, adequate segmental resection with end-to-end anastomosis is performed. In the lower third of the sigmoid, so-called anterior resection with anastomosis of sigmoid to upper rectum is the operation of choice.

In cases uncomplicated by obstruction or the severer types of pericolonic infection, such resections

and anastomoses can safely be accomplished in one stage. Some surgeons add a complementary tube cecostomy as a safety valve. After withdrawal of the tube such cecostomies close spontaneously and are, therefore, considered one stage procedures.

Because of its success and simplicity in the uncomplicated case of carcinoma, there is danger that primary resection may be used routinely where the development of complications makes employment of the measure much more hazardous.

All are agreed as to the necessity of preliminary decompressive procedures in acute complete obstruction of the colon. In obstruction of the right and transverse colon, when resection is to be followed by an ileocolic anastomosis, sufficient decompression can almost always be obtained by peroral intubation, preferably with a Harris or Cantor tube, when the ileocecal valve is incompetent. In my experience, however, it is unwise to depend upon this method alone to relieve obstruction in the distal segments of the colon when anastomosis between two segments of colon is contemplated.

When an intestinal tube cannot be passed in right colon obstruction, a cecostomy is performed through a right McBurney incision. Similarly, for obstruction up to the splenic flexure, an exteriorizing type of cecostomy is used. In obstructions distal to the splenic flexure, a double-barreled colostomy is done in the right transverse colon. In all such instances, a second-stage resection and anastomosis is performed in about two weeks.

Lesser degrees of obstruction can frequently be controlled by the preparatory regime outlined above, so that a one-stage procedure becomes possible. In some borderline cases, however, though the obstruction is not complete, the colon is not sufficiently decompressed by these procedures to permit safe primary colonic anastomosis. If the obstructing lesion is in a mobile segment of bowel, an obstructive resection may at times be the best solution of the problem. If the lesion is in a fixed segment or low in the sigmoid, it may be wiser to perform a preliminary colostomy in the right transverse colon.

When infection is present in and around the neoplasm, the indication for a preliminary colostomy depends upon the severity of the process. The cases with minor infection will respond to antibiotic therapy. However, with a large tender mass, a septic type of fever, and the possibility of adhesion of adjacent viscera, preliminary colostomy in the transverse colon is probably the best treatment to use.

The operation of obstructive resection, though much more rarely indicated than a decade ago, still has a place and is at times the best way out of a dilemma when, in spite of supposedly adequate preparation, the proximal bowel is found at operation to be more distended than anticipated. At times an obstruction resection is indicated when multiple procedures must be performed. The operation also is useful for poor risk patients when the neoplasm is in a mobile or easily mobilized segment of bowel.

Care of Colostomy

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THE standardization of the care of the colostomy is as impossible as the standardization of individual persons. Our duty is to teach the fundamentals, then let each patient work out the plan best suited to his mode of living.

Irrigations are instituted before leaving the hospital. Some prefer the irrigation at night, others use it only every other day, while a few have such perfect function that evacuation occurs only at set intervals and no irrigation is necessary.

A sufficient amount of water must be injected into the colon at one time to fill the cecum at least partially if complete emptying is to be attained. To do this, it is necessary to prevent water from escaping from the stoma until the desired amount is injected.

The escape of water can be stopped by a simple device made by inserting a No. 18 or 20F catheter through a piece of rubber with a diameter of 3 or 4 in., cut from an automobile tire inner tube. The catheter is inserted 2 or 3 in. only. The rubber disk is pressed against the stoma, preventing the escape of the water from around the catheter until the desired amount is injected.

Another means of control is to insert the catheter through the tip of a large nursing nipple. This device is used in the same manner. A urinal is quite satisfactory for collection of the discharge. These supplies are cheap and easily obtained.

The bulk of the injection usually returns in a short time. Those who retain a portion of the solution longer may avoid inconvenience and loss of time by wearing a medium- to large-sized plastic bowl cover

Irrigation of the colon

containing a coil of cellucotton. This is discarded after one-half to one hour. A spot of petrolatum jelly on a cleansing tissue is placed over the stoma, then a small plastic bowl cover is placed over that and held in place by an elastic belt—the "two-way stretch" girdle for women and a wide elastic band supporter, such as the so-called bracer royal, for men.

A colostomy irrigator with a closed system that is clean and convenient is available and is satisfactory to many.

Prepared for Modern Medicine

Infected Pilonidal Sinus

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PILONIDAL tissue, an embryonic invaginated ectodermal remnant over the sacrococcygeal area, frequently becomes infected or abscessed and sinused in early youth. Otherwise, it remains merely a simple skin dimpling with a buried subcutaneous core of ectodermal structure.

Local trauma, coincidental to active military life, gave rise to a high incidence of infected pilonidal sinuses during World War II. Because of the ensuing prolonged debility, the condition is an important medical problem in the military service.

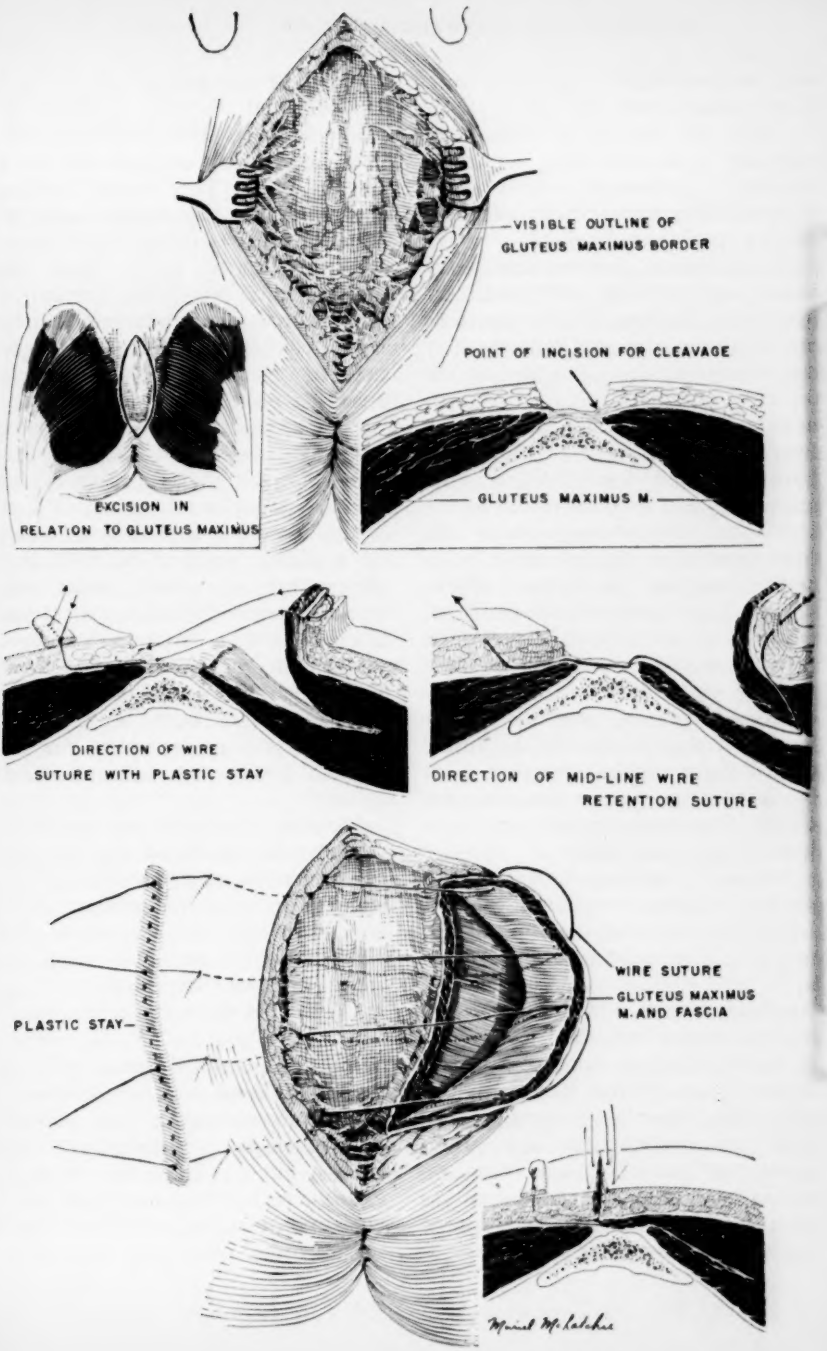
Faced with large numbers of pilonidal sinuses to cure as expeditiously as possible during World War II, I devised an operation consisting of a block excision of the infected tissue, followed by a sliding gluteus maximus muscle graft from the side over the excision defect. The technic was applicable in most cases encountered and has also effected rapid recovery and cure in civilian practice. The operation was described in *Archives of Surgery*, June 1946.

In a pilonidal sinus operation, cure depends entirely upon complete excision of all pilonidal tissue. Recovery of the patient hinges on management of the wound. If closure and primary healing can be obtained, as with this operation, obviously weeks and months of convalescence are saved.

Considering the pathology and pathogenesis of infected pilonidal sinus, one might surmise that the surgical treatment and cure would be simple, as long as excision is complete and wound closure effected. However, location of the lesion over the sacrococcygeal region, the presence of sacral fascia as a wound base, and the fact that the tissue itself is infected or potentially infected, are factors responsible for many failures in other surgical methods. Recurrence of pilonidal sinus depends totally upon unexcised pilonidal tissue.

The infected stage—For the noninfected pilonidal tract with telltale dimples and symptomless tissue, surgery would be promiscuous and unwarranted. Surgery is necessary for an infected pilonidal sinus, since, after the acute or subacute onset, chronic infection invariably persists with not infrequent recurrent acute or subacute flare-up, extension of infection, and symptoms.

Thus we may initially see the subcutaneous signs of the inflammation, which usually progress rapidly to frank abscess and pus accumulation with pain and swelling over or near the sacrococcygeal area. Careful examination reveals dimples, and incision may show a nest of curly matted hairs. When an extension of abscess has occurred from recurrent inflammatory attacks, the findings may be confusing, since no hairs or dimples


VISIBLE OUTLINE OF
GLUTEUS MAXIMUS BORDER
POINT OF INCISION FOR CLEAVAGE
EXCISION IN
RELATION TO GLUTEUS MAXIMUS
GLUTEUS MAXIMUS M.
DIRECTION OF WIRE
SUTURE WITH PLASTIC STAY
DIRECTION OF MID-LINE WIRE
RETENTION SUTURE
WIRE SUTURE
GLUTEUS MAXIMUS
M. AND FASCIA
PLASTIC STAY

may be immediately manifest and, when remote from the sacrococcygeal area, the abscess or sinus may resemble a fistula-in-ano, a simple furuncle or carbuncle, osteomyelitis, or some other embryologic defect involving the lower meninges.

Pericoccygeal involvement may occur and postanal sphincteric extension is frequent. Such extensions are for the greater part inflammatory and invariably can be traced to the primary offending pilonidal tissue, usually confined more or less to a few centimeters' distance superiorly, inferiorly, and laterally from the sacrococcygeal median raphe area.

Block excision—Injection of the tract by dye as an operative aid is never complete, since even microscopically the tract cannot with certainty be completely visualized. True recurrence takes place and depends entirely upon ectodermal cells remaining unexcised, whether follicular, sebaceous, or merely the tufted end of the grapelike structure. Wide block excision assures complete excision. Dissection remains too haphazard in comparison.

Improper methods and their improper conclusions—Block excision and subsequent wound closure should never be attempted until all signs of acute and subacute infection have subsided. Nor should wound closure be attempted which will result in abnormal tissue tension or leaves a dead space against the sacral fascia. This invariably occurs when skin and fatty tissue are pulled across the postsacral wound in so-called simple closures. Serum or blood, and later, pus are apt to occur subcutaneously.

Drainage or partial grafts and flaps are all varying attempts to overcome these difficulties and, too often, are merely compromises to a surgical insult. That wound healing does transpire in many such instances should be thought a phenomenon of nature rather than the accepted rule. Nor is the prevention of skin sinus of primary importance. It is, too often, only a partial answer to any method that does not meet the problem completely.

Gluteus maximus muscle sliding graft closure—The author's operation follows a block excision of the infected pilonidal sinus and effects a supple wound closure in all cases by a sliding graft of laterally split gluteus maximus muscle tissue, with its superimposed fascia, subcutaneous fat and skin, attached and intact, across the sacrococcygeal wound. This preferably is unilateral, but in extensive cases may be bilateral. Some authors reporting on the operation prefer the bilateral graft closure.

Surgical principles are sound in that: [1] A wide block excision precedes the closure operation; [2] supple closure is secured without tissue tension in all cases no matter how extensive; [3] the dead postsacral space is filled with muscle tissue; [4] healing is more rapid because of the muscle graft; [5] the muscle bathes the potentially or actually infected area and permits efficient action from antibiotics and sulfonamide therapy postoperatively; and [6] last but not least, the operation places a pad of tissue over an otherwise too denuded and unprotected sacral wound area.

Prepared for Modern Medicine

Inflammation and Infection

Diverticulitis of Colon

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DIVERTICULOSIS may occur in any portion of the intestinal tract. The disease is found in both the small and large bowel on the mesenteric border near the perforating arteries. In the small bowel, diverticula are more common in the duodenum, and hemorrhage and perforation occasionally can occur.

Diverticula may be found in any area of the colon, although the left colon is more often involved and is the site of nearly all the complications. The lesion is not believed to be congenital, as it is uncommon up to the age of 35, becoming more frequent after 45, and showing no increase after the age of 65. The accumulation of roentgenologic data since 1914, when the lesion was first revealed by roentgenogram, supports the theory that the condition is acquired and has increased our knowledge concerning the various complications, chiefly inflammatory, which appear in approximately 15% of cases of diverticulosis.

In spite of the efficacy of the barium enema, however, and the information which can be gained by sigmoidoscopic examination, diagnostic problems continue to arise when a distinction is being made between carcinoma of the colon and peridiverticulitis with tumefaction or when both lesions are found in combination. The roentgen picture with diverticulitis shows a long lesion with fusiform ends and the presence of diverticula, as contrasted with the typical findings when a malignant process is present—a short, fixed deformity resembling an apple core.

Sigmoidoscopic examination of an individual with diverticulitis can be expected to demonstrate sacculation, immobilization, and angulation of the lower sigmoid and, rarely, the open stoma of a diverticulum.

Medical opinion concerning intestinal bleeding in individuals with diverticulosis or diverticulitis has changed many times. Years ago majority opinion held that bleeding could not occur from such lesions and that when a patient known to have peridiverticulitis of the colon had bleeding, it was *prima facie* evidence that a malignant process was present, probably engrafted upon the diverticulitis. Later the pendulum swung to the extreme opposite view, and the detection of diverticula was believed to explain any intestinal bleeding immediately.

Our present attitude is a compromise between these two opinions. I am still convinced that these lesions can be solely responsible for intestinal hemorrhage, particularly of the massive spontaneous type. On the other hand, we must be cautious in accepting diverticulosis as the cause of any bleeding, particularly the frequent passage of small amounts

of blood or blood-stained mucus, without careful and repeated roentgen-ray examination of the colon. Bleeding of this latter type may signal the presence of a polypoid or papillomatous neoplasm difficult to demonstrate by barium enema.

In spite of the helpful diagnostic procedures, I find that several cases are encountered every year in which the diagnosis must finally be made by the pathologist after excision of the mass. Surgical intervention for the treatment of diverticulitis actually originated in a series of erroneous diagnoses resulting from the resemblance of this lesion to cancer. Lord Moynihan of Leeds, in 1906, reported 6 persons upon whom he had operated with the expectation of finding malignant disease of the colon. Subsequent examination of the specimens or the after history showed that the diagnoses had been incorrect in 4 cases and that the lesion was due to a perforation of a "false diverticulum."

This difficulty is partially responsible for the present tendency to use resection, in one or two stages, of a tumefaction presumably caused by diverticulitis. Also surgeons not infrequently find that long periods of drainage of the bowel by a colostomy proximal to the inflammation are not sufficient to correct the irreversible changes which frequently occur in the colon.

In the presence of acute infection such as abscess or perforation, a temporary transverse colostomy should be done, coupled with drainage of the left paracolic gutter. This step should usually be followed by resection and anastomosis of the involved bowel at a later stage. If the condition is quiescent when surgery is contemplated, the lesion can be extirpated in one stage if proper preparation of the bowel has been made, including the use of sulfonamides and antibiotics for at least a week.

Nonspecific Ulcerative Colitis: Medical Therapy

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THE treatment of nonspecific ulcerative colitis poses a difficult problem to the practitioner.

The acute fulminating phase of the disease, a phase being seen with increasing frequency, is a most serious malady, very hard to combat and with a high mortality. The chronic form unfortunately has a great tendency to recur, with recurrences sometimes spaced as long as twenty years apart. A direct permanent acquired immunity to the disease does not seem to exist, yet a material percentage of patients are so improved, or so-called cured, that good health and well-being are restored for a long period of time.

The therapy of patients with chronic recurrent nonspecific ulcerative colitis is, in general, supportive. Measures include repeated transfusions, intravenous injections of plasma, or, even better, intravenous injections of hydrolyzed protein products, of which many are on the market. Replacement of the depleted protein reserves of the body is very important, since the diarrhea

washes the normal digestive products out of the intestine and gives rise to a relative and absolute hypoproteinemia.

The anemia and vitamin depletion call for replacement, but the administration of the vitamins by mouth in the presence of violent diarrhea defeats the purpose. Intramuscular injections of crude liver extract and vitamin B complex represent a sure method of replacing essential vitamins. Dosage of these ingredients should be 1 to 2 cc. of each, the injections being repeated every day or every alternate day.

Specifically we should like to feel that the sulfonamides, particularly the insoluble forms, would act as bacteriostatic agents and overcome intestinal infection. Many cases seem to react specifically to sulfonamide preparations. Succinylsulfathiazole in doses of 0.25 gm. per kilogram of weight or phthalylsulfathiazole, 0.1 gm. per kilogram of weight, should be tried, and persistently tried, in every case. These drugs are relatively insoluble in the intestinal tract, are with rare exception nontoxic, and can be administered over a long period of time, perhaps for months.

Penicillin is useless in ulcerative colitis. Streptomycin by mouth or by injection has failed to show any beneficial effect in the chronic afebrile type of the disease.

For the afebrile type of ulcerative colitis, indolent and protracted, with diarrhea, loss of weight, and secondary anemia, the best attack in my experience is nonspecific shock protein therapy. For this purpose I utilize typhoid vaccine, giving an intravenous injection of 50,000,000 bacteria every fifth day, increasing successive doses by 25,000,000. The vaccine should be injected intravenously, should produce chill and abrupt rise in temperature, but should allow a rapid decline of the temperature to the normal base line within twenty-four hours. This form of therapy is strikingly successful in a large proportion of the cases.

As for diet, I am exceedingly lenient, allowing the patient everything except roughage. Raw fruits and vegetables must be excluded, but apart from that, any food which will tempt the appetite is permissible. The only exception would be the restriction of milk for patients known to be allergic to milk products.

Patients with the acute fulminating, severely toxic, febrile forms of the disease must be maintained with liberal intravenous therapy and transfusions. Sulfonamide preparations should be tried but are not usually successful. Streptomycin gives very promising results in cases of acute toxic ulcerative colitis. Dosage is 0.5 gm. intramuscularly every six hours for five to eight days. The results are often striking. Theoretically, streptomycin by mouth should be efficacious, since it is not absorbed in the intestinal tract and should act as a local antibiotic. Many clinicians give both oral and intramuscular streptomycin.

Of all the antibiotics, chloramphenicol by mouth seems to be the best, at least at present, in chronic ulcerative colitis; 500 mg. or more four times a day, in capsule form, may be continued for a full week and then be followed by phthalylsulfathiazole by mouth. This

alternation of antibiotics may be continued ad infinitum.

ACTH shows immediate favorable results in ulcerative colitis. A state of euphoria is easily approached; temperature may fall to normal; and the bowel movements become less frequent. This apparent improvement may last two weeks or more depending upon the size of the dosage but all the improvement is immediately lost as soon as the drug is discontinued.

Ulcerative Colitis: Surgical Therapy

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THE etiology of ulcerative colitis continues to be unknown. Is this a systemic disease in which inflammation of the colon is a final phase, or is it primarily a colonic lesion with resultant systemic manifestations? In answer one can say that it is impressive how vigorous and well these patients remain after all the diseased bowel has been removed.

Experience shows clearly that our mistakes were invariably due to an overconservatism—ever trying to preserve involved bowel, diverting ileal contents from diseased colons, in hope that rest, time, and some new drug would allow reestablishment of the fecal stream. Pursuing this conservatism, we have seen the colitis steadily progress, and malignancy sprout, whether in the diverted colon or in the dangerous remaining rectal segment.

Similarly, our group of patients with predominantly left-sided disease has been instructive. Influenced by the barium enema roentgenogram showing a relatively normal right colon, we have performed transverse colostomies which time has proved unwise.

Another phase of our conservatism has been in reuniting the ileostomy with the remaining rectosigmoidal segment. Latent disease has flared and, by contact, has traveled up the small bowel with disastrous results. We have a sizable number of cases in which various segments of the small bowel are involved in conjunction with portions or all of the large bowel. Saving slightly diseased bowel proves to be disastrous in the long run. It is interesting to note how often preoperative roentgen studies seem to show that the terminal ileum is involved when, at operation, with the benefit of microscopic studies, the terminal ileum is found entirely free of disease.

Revolutionary changes have taken place in the surgical treatment of ulcerative colitis during the past quarter century. As long ago as 1898 Dr. Howard Lilienthal of New York removed the entire colon of a 25-year-old woman. He performed ileostomy and at a later date restored the continuity of the bowel by doing an ileosigmoidostomy end to end. The outcome was successful; the patient lived to the age of 66 and died of heart failure.

In the intervening fifty years appendicostomy and colostomy were used with the idea of sterilizing the interior of the bowel by irrigation and antiseptics. These two maneu-

vers not only proved unsuccessful, but were a hindrance when other surgical procedures had to be inaugurated.

For a good many years ileostomy alone was thought to be curative. Then it became evident that when the colon was not removed, perforations occurred, sepsis continued, and malignancy developed. Some fifteen years ago, removal of the colon and rectum was done in three stages: first, ileostomy; second, subtotal colectomy; and third, proctectomy.

In a good many instances the rectum was not removed, in the hope that some curative agent would be discovered to restore this segment and warrant the taking down of the ileostomy and insertion into the rectal pouch. As we know, in 90% of cases ulcerative colitis starts in the rectum, in the other 10%, the disease starts in the right or transverse colon.

Ileocolonic anastomosis certainly in our hands has not proved successful. We have seen too many instances in which the disease has traveled from the rectum into the small bowel with ensuing death. Ileal-anal anastomosis in the hands of Ravitch has proved successful in about 60% of cases.

When ileostomy was being performed as a preliminary stage, the colon was often not removed for many years; this proved disastrous, because frequently an exacerbation of the disease would occur in the remaining colon and cancer developed; in our series this happened in 15%.

Vagectomy has been employed for the cure of idiopathic ulcerative colitis. In my opinion there is no physiologic explanation to justify this procedure, and the complications of vagectomy, although not frequent, are such as to contraindicate its promiscuous use. Finally there exists the danger that by doing vagectomy, we may only relieve the symptoms and allow the disease to advance unnoticed to a critical stage. With our present knowledge that carcinoma occurs in diseased colons and that the percentage of cancer increases with the duration of the disease, the danger to the vagectomized patient is obvious.

When ulcerative colitis reaches a stage in which the colonic mucous membrane is ulcerated, friable, and infiltrated with lymphocytes and plasma cells, the bowel itself is shortened, tubular, and pouring forth pus and blood, and the patient is septic, anemic, and emaciated, we believe that surgery is not only indicated but essential.

Up to September 1, 1951 we had done ileostomies in 92 instances with 13 deaths, a mortality rate of 14%. We have carried out subtotal colectomy in 70 cases with 8 deaths, a mortality rate of 11%. Abdominoperineal resection was done in 28 instances with no deaths. The total number of patients operated upon was 140, and the total number of deaths was 26—an over-all mortality of 18%. On these 140 patients, 278 surgical procedures were carried out, making the procedure mortality rate 9%.

To recall earlier experiences, we had an excessively high mortality rate when we operated in the acute fulminating stage, particularly when

hemorrhage was a factor. Over half of our first 13 patients given ileostomy in the acute stage died. This mortality rate was prohibitive and we sought aid from the internists. The result was simple. We would not operate unless the patients were in better condition. Upon rallying all supportive measures to the aid of these critically ill patients, the majority were tided over into a chronic phase and the over-all mortality was greatly reduced.

However, a sizable minority remained who, in spite of all supportive measures, succumbed in the fulminating phase. It is on this group that attention has been focused in recent years; our attitude has become quite bold. We are convinced that not only earlier but also more complete surgery can be successfully carried out in such cases, thereby considerably lowering the mortality.

A valuable therapeutic aid for these patients may be ACTH or cortisone, but we have not yet had a large experience with these promising agents. We have, however, noted a pronounced temporary relief of symptoms following the use of Banthine.

We would like to emphasize the necessity of earlier operative interference. In so doing, we fully realize the indefinite line that exists between the early cases in which recovery occurs and which, therefore, are not ulcerative colitis, and those that go on to the classic disease. Once a meticulous study has been carried out, ruling out other possibilities such as amebiasis, and the diagnosis of ulcerative colitis is made, the problem is a surgical one.

If surgery is decided upon, we question whether there is a place for ileostomy alone. Our experience tends to point to ileostomy and resection in one stage, not only in the chronic, but also in the acute fulminating phase. In a small but impressive group of 6 patients who were desperately ill, we performed colectomy where, in former days, we would have done ileostomy alone and would have believed more surgery at that time a sure fatality.

In recent years, the sulfonamides were thought to be of help in partly controlling this disease. We had hoped the antibiotics would prove beneficial, but this has not been the case. It is true that certain antibiotics will sterilize the fecal stream, but they have no clinical value when the disease is established in the wall of the colon.

Many are the instances in which, for the patient to survive, the annoyance of ileostomy must be endured.

Care of Ileostomy

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Good postoperative care is often hindered by poor preoperative planning. The success of the ileostomy depends on the skill of the surgeon and the careful preparation of the patient, medically, anatomically, and psychologically.

The ileostomy should be placed so that the appliance used does not interfere with ambulation and func-

tion. The opening must be away from the waistline, neither so high that it hampers bending nor so low that the symphysis pubis interferes with the fit of the bag. The site should be away from the midline, because this area is conspicuous and is prone to trauma. The right lower quadrant is the best location, about halfway between the umbilicus and the superior anterior iliac spine, and midway between the level of the umbilicus and symphysis pubis.

Single-barrel ileostomy is the type of choice. A skin-graft ileostomy is bulky, prone to obstruct, and uncomfortable. The graft seems to act like a rigid ring and, if edema of the ileal end occurs, causes constriction and even necrosis. Patients who have had a skin-graft ileostomy revised to a regular single-barreled type have been emphatic in preference of the latter.

Postoperatively, with the catheter still in the ileum, the skin is protected by gauze fluffs and doughnut packs for several days, allowing the surgeon to inspect the wound and the ileum often. As soon as the ileostomy begins to function, a rubber sheet may be cut out to fit the skin around the stump.

The various protective greases, powders, and patent concoctions are of little avail, as the ileal discharge seems to strip away the protective coating with ease. The best of these agents seems to be a good grade of rubber cement containing some mineral oil and a little zinc oxide. This may be spread liberally around the area and allowed to dry and is easily removed with benzine.

By the fourth day, the patient is fitted with a temporary appliance that has at least an extra centimeter in the diameter of the opening to prevent compressing the stump. A wire frame type is useful at this time. By the eighth day, a new rubber disk may be cut, allowing extra space, but usually smaller than the first. The appliance may be glued to the skin and the patient should now be out of bed and helping himself somewhat.

From a survey of a large group of ileostomy patients, we have found that morale is at its lowest point at this stage. The initial pain has worn off and the patient has just begun to grasp the full extent of his condition. Such words as "shocked," "horrified," and "stunned" are used to describe their emotions, even though careful preoperative explanation has been given of exactly what the operation will mean. At this time, another patient who is ambulant and has an ileostomy is of the greatest value. The sight of one who has gone through the ordeal and is walking about with a perfectly normal outward appearance is the best medication for the wounded psyche.

All too often at this point the patient is left to his devices by the surgeon who feels that his work is done. However, it is just here that postoperative care is needed most.

The hospital stay for the ileostomy patient averages sixteen to twenty-one days. Before discharge from the hospital, the patient should be carefully fitted with a rubber adhesive type of bag. This should be of the modern type with a rubber-covered metal disk, supported by a

small belt, a rubber bag of about 10-oz. capacity, and equipped with a dependable valve. Most valves are poorly designed and cheaply made. A well-designed valve is needed that will not leak under stress and not slip under strain; furthermore, the valve must be easy to open and close so the appliance may be emptied and cleaned several times a day.

Rubber cement is first applied to the face of the rubber diaphragm of the disk and set aside to dry. The patient should sit astride the toilet, well back on the seat so that any ileal discharge will drip into the bowl. The best time for changing the bag is before breakfast.

The skin is first cleaned with cotton balls and benzine. Care is taken to clean around the edge of the ileostomy, particularly the skin juncture. A 4-by-4 or 4-by-8 in. pad of gauze soaked with soap containing hexachlorophene is used to clean the benzine from the skin; this is followed by a water rinse. Next, 70% alcohol containing a little formaldehyde solution is applied with cotton balls to the skin. This is wiped dry with a cotton ball, and rubber cement is applied to the skin around the ileostomy stoma, making sure that no area is left uncovered. After one minute, the bag is carefully centered and pressed down around the ileostomy stoma. A tight, waterproof joint results, which lasts at least forty-eight hours. This whole procedure is accomplished in less than thirty minutes.

During the day, the bag is cleaned by emptying and then pouring water into the end until the return is clear.

The patient must be seen at monthly intervals for three months after discharge from the hospital, and then once every six months. A quick follow-up is not enough, as the patient has many problems requiring detailed answers. I have found group therapy most helpful. The patients meet once a month and discuss their problems freely and openly.

As a group, our patients are thus restored to about 95% of social and physical function.

Anal Fissure

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THE doctor who assumes responsibility for the care of a patient with anal fissure should understand fully the pathogenesis of the lesion, the surgical treatment indicated, and the necessity for persistent and meticulous postoperative care.

The primary cause of anal fissure is anal infection. The anatomic structures involved in anal infection are the anal crypts, ducts, and glands and the neighboring blood vessels and lymphatics.

Stage 1—During defecation, fecal particles are caught or trapped by one or more anal crypts (Fig. 1*a*). Bacterial organisms thus have an opportunity to enter first the anal ducts, which open into the deepest portion of the anal crypt, and then the anal glands. Neither trauma nor "cryptitis" is an essential factor in anal infection. The anal crypts, ducts, and glands provide portals of entry into the anal tissues.

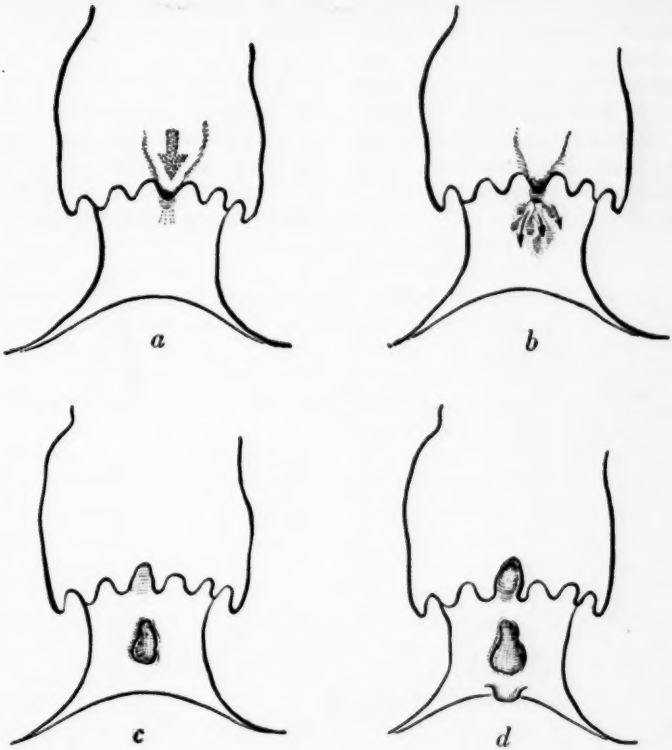

Fig. 1. Role of anal infection in anal fissure; diagrammatic coronal sections illustrating: [*a*] Stage I. Infectious material trapped by an anal crypt and guided into the attached anal ducts and glands. [*b*] Stage II. Invasion of perianal tissues. [*c*] Stage III. Dissolution of anal skin resulting in anal ulcer (anal fissure). [*d*] Anal fissure accompanied by enlarged anal papilla near the proximal border and a sentinel tag at the distal border.

Stage II—Very little edema is required to occlude the tiny anal ducts, resulting in retention of infectious material within the ducts and attached glandular structures. Invasion of the perianal and perirectal tissues can occur either directly, from rupture of the gland-duct structure, or indirectly by way of the lymphatics and blood vessels which are intimately related to the anal ducts and glands (Fig. 1*b*).

Stage III—Once infectious material has gained entrance to the perianal tissues, infection can occur either superficially or deeply, de-

pending upon anatomic variations in the affected structures. Localization of the process superficially in the subcutaneous tissues of the anal wall, usually the posterior wall, is likely to be followed by dissolution of the overlying anal skin. The lesion thus established is a true anal ulcer (Fig. 1*c*).

acute, inflammatory, cryptic disease which is commonly observed is probably a secondary process following a retrograde flow of purulent material from an anal abscess.

Liquid bowel content can enter an anal pocket more readily than can material from a well-formed stool. This explains the anorectal se-

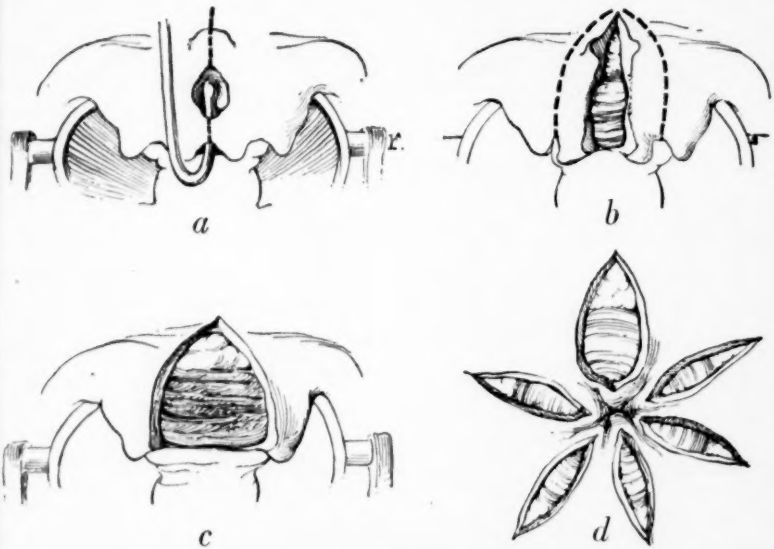

Fig. 2. Excision of posterior anal fissure; multiple cryptotomy; patient in prone position. [*a*] N. D. Smith operating anoscope in position; hooked probe used in exploration of underlying anal crypt; dots indicate line of *incision*. [*b*] Incision completed; dots indicate lines of *excision*, which include sentinel tag and enlarged anal papilla. [*c*] Excision of fissure completed. [*d*] Multiple cryptotomy completed; all wounds carried beyond anal verge; sphincteric muscle fibers clearly visible in each wound.

Here, as in other inflammatory processes, such variable factors as virulence of the invading organisms and resistance of the tissues of the host are significant.

In all probability no such thing as a primary "cryptitis" exists. The

quelae of diarrheal disease and the vicious cycle established by the abuse of oil or laxatives. The failure of a true anal fissure to heal spontaneously or to respond to palliative treatment is due to the inexhaustible supply of infectious material which

is guided into the tissues underlying the lesion.

Symptomatology—Pain with and following stool is the chief symptom of fissure. Bleeding is common but is only slight. The patient may at first tend to delay defecation to avoid the concomitant pain, then resort to mineral oil or laxatives to soften the stool. Thus a change in the patient's bowel habit is understandable.

Differential diagnosis of anal fissure requires consideration of anal epithelioma, venereal lesions (chancre, chancroid), tuberculous anal ulcer, agranulocytic angina, and ectropion.

Complications—The inflammatory process associated with anal fissure may progress to abscess formation. Spontaneous drainage establishes a short, subcutaneous fistula near the distal margin of the fissure.

The skin-covered tag which often develops at the distal margin of an anal fissure is aptly called a sentinel tag or sentinel pile (Fig. 1*d*).

One or more papillae near the proximal border of the fissure may be subject to lymphedema, fibrosis, and ultimate hypertrophy (Fig. 1*d*).

Repeated episodes of acute and chronic anal infection can involve the tissues in all quadrants of the anal canal. Scar tissue develops, the contracture of which establishes varying degrees of anal stenosis.

Treatment—Proper understanding of the pathogenesis of anal fissure should readily signify the futility of ointments, suppositories, and like medications or the time-honored topical application of silver nitrate.

The definitive treatment of anal fissure is surgical excision, including destruction under regional anesthesia of the underlying anal crypts or pockets (Fig. 2). In addition, the anal crypts in the remaining anal quadrants should be destroyed by exteriorization. Sectioning of the underlying scar tissue at these points creates adequate room in the anal canal. Anal papillae are excised. All wounds must be carried well beyond the anal verge.

Since the anal ducts and glands are microscopic in size their excision is unlikely except in the performance of adequate hemorrhoidectomy. However, ablation of the crypts which guide infectious material into the anal ducts and glands is accomplished by the linear scars resulting from excision of the fissure and from multiple cryptotomy.

Meticulous postoperative care is as important as the surgical procedure in accomplishing satisfactory results.

Anorectal Fistula

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ALL anorectal fistulas are infected. This is not unexpected in view of the constant contamination of the area, the frequent stretching, loose areola, and rich lymphatic drainage, aided and abetted by harsh toilet tissue or substitutes and by irritant, well-meaning therapeusis.

The external sphincter muscle, through its properties of contraction, has thrown the mucosa of the anorectal canal into a series of longitudinal folds, each with a small cup-like arrangement at the level of the

anorectal line—the crypts of Morgagni. These lie at the junction of the sensitive anal squamous epithelium with the relatively insensitive columnar rectal epithelium.

The vast majority of fistulas originate in an infected crypt and the internal opening is usually found in one of the posteriorly situated crypts. The usual story is: an infected crypt, a submucosal or ischiorectal abscess. The abscess points and ruptures or is incised with immediate relief, but the fistulous tract may remain through the scar of incision or spontaneous rupture.

The longer the abscess remains unopened, the greater the likelihood of branching sinuses, multiple openings, and complicated fistulas from the parent stalk. Each fistula has an internal opening and an infected tract which leads to an external opening but which may be onto skin or into adjoining organs or viscera, or both. The tract is usually along one of the posterior vascular channels.

Symptoms are usually simple: one or more minor or severe abscesses followed by continuous discharge, moisture, and pruritus. The discharge is profuse in acute cases and diminishes as the condition becomes chronic.

The diagnosis should be simple, the greatest single aid being good illumination and clear vision. Since recognition of the internal opening is vital to the success of treatment, patience should not be metered by the clock in attempting to find the opening.

Ordinarily only 1 internal opening exists. If 2 are found, they probably represent 2 different fistulas. A probe ordinarily can be passed easily, but difficulty may be experienced. The fistula can usually be found posteriorly at the anorectal line. Under clear vision and with spinal anesthesia to obtain a relaxed sphincter, an ulcer may be seen or a pledget of granulation tissue or a cord-like tract be felt which, if pressed, will cause a dimpling at the site of the internal opening.

Dyes injected through the external opening may be useful in finding the internal opening. Peroxide is more helpful; the tiny bubbles are usually easily seen at the point of egress. If dyes are used, the excess should be syringed out to prevent the confusing staining of adjoining normal tissue during dissection.

The principle of treatment is simple: Using spinal anesthesia, with a relaxed sphincter, the whole tract should be identified. Simple submucosal abscesses and fistulas should be excised vertically and carried onto the skin margin. Deeper tracts are dissected out completely and the skin and fat edges of the trough are cut well back to prevent infolding.

The surgeon should meticulously lay open all branching sinuses and tracts. When the tract passes through or beneath the external sphincter, a safe rule is: If the fistula is old and chronic, the sphincter can be cut at right angles with impunity, since it is already fixed in position.

The external sphincter has three recognizable layers. The most superficial, the subcutaneous external sphincter, which is designed not so much to retain feces as to prevent objects from being pushed in, may

be cut across at any time, in old or recent fistulas. In recent fistulas, the tract should be dissected out from each end and a metal dowel should be passed through the portion under or through the sphincter. This portion should be thoroughly coagulated with an electric current. A seton is then passed through and tied around the sphincter and allowed to cut through slowly. In doubtful cases, in inexperienced hands, the seton causes less damage than an ill-controlled knife.

All opened tracts should be dressed thrice weekly, kept free from tunnels and bridges, and allowed to granulate from the bottom up before epitheliazation is permitted.

Anorectal Tuberculosis

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VERY few anorectal lesions in the general population are tuberculous in nature, but most anorectal lesions in tuberculous patients are tuberculous. In my experience, anorectal tuberculosis is never primary but is always secondary to pulmonary tuberculosis.

The greatest incidence of anorectal tuberculosis is in the second and third decades, and the disease occurs more frequently in males, 6:1. The organism responsible for anorectal tuberculosis may be the human or bovine type, the majority of cases being caused by the former.

Invasion by the bacilli may occur in one of several manners: by the [1] intestines, when a patient who has pulmonary tuberculosis swallows sputum laden with bacilli, [2] blood stream, through hematogenous infection, [3] lymphatic stream, through lymphogenous infection, or [4] direct extension, from the sacrum, coccyx, pelvic bones, prostate, urethra, vagina, or ovaries.

There are four types of perianal tuberculosis:

1] The *ulcerative* type is by far the most common. This variety starts as a small elevation near the anal orifice and frequently is irritated by trauma. The swelling increases, the tissues soften and break down, and an abscess develops. Pus obtained by incision or by spontaneous rupture is thin, foul-smelling, and slightly bloody. After this evacuation, a shallow ulcer forms with a gray base and sharply defined undermined edges. The ulcerative process slowly progresses and gradually invades the perianal skin and musculature and may eventually destroy the entire anal canal.

2] *Verrucous anorectal* tuberculosis is comparatively rare. This type is first seen as a group of small wart-like papules which increase slowly in size and become multiple.

3] *Lupoid anorectal* tuberculosis is likewise rare. The lesion occurs at the margin of the anus as a small, round, elevated patch or nodule, reddish-brown in color and somewhat soft. The center insidiously breaks down to form an irregular, clean-cut ulcer with an indurated base covered by mucopurulent discharge.

4] *Miliary anorectal* tuberculosis indicates an advanced stage. The lesion occurs at or below the anal intermuscular septum, beginning in the hair follicles or sebaceous glands as millet-seed nodules below the epidermis. Necrosis follows with cup-shaped ulcers. The prognosis is poor.

The histopathologic process for most cases is fairly typical. There is an infiltration of mononuclear leuko-

cytes with marked fibrosis. Tubercles and, in the more advanced cases, areas of caseation and lymphocytes and giant cells appear.

Diagnosis—The symptoms may be very slight in the initial stage, consisting chiefly of a sense of irritation or soreness. The patient then becomes aware of a gradually increasing swelling which causes little pain but may be tender. This painless swelling should make the physician suspect the possibility of an acid-fast infection. When the lesion is within the grasp of the sphincters, pain occurs. After ulceration has developed, the chief complaint is an irritating, foul-smelling, purulent discharge.

The diagnosis of anorectal tuberculosis may be very difficult to make. History of a slightly tender swelling which ruptures spontaneously, becoming a chronic ulcerative process which fails to respond to treatment, is very suggestive. If the ulcer is large, with sharp undermined edges and a silvery-gray base, the likelihood of tuberculosis is greatly increased. If, in addition, roentgenograms reveal pulmonary tuberculosis, the diagnosis becomes even more tenable. Finally, if the results of guinea pig inoculation are positive and the biopsy reveals tubercle formation, caseation, giant cell formation, and, possibly, tubercle bacilli, evidence is conclusive.

Treatment—The general therapy is that of tuberculosis in any form—rest, diet, change of climate if necessary, and supportive medication. The local treatment consists of adequate drainage of all abscesses or retention pockets. As soon as the acute process has subsided, complete excision should be performed, if consistent with the patient's condition.

All sinuses must be carefully probed and opened and the anal canal carefully examined for internal openings or infected crypts. The vast majority of cases of anorectal tuberculosis comprise perianal sinuses rather than fistulous tracts. Hydrogen peroxide colored with methylene blue is extremely helpful in determining the presence of a fistulous opening in the anal canal.

All ulcerative processes and sinuses must be excised down to the glistening basement membrane and all undermined skin and overhanging edges removed. This is best done by means of the coagulating current which seals the lymphatics and blood vessels and tends to prevent dissemination of the infection. All wounds should be left open to heal by secondary intention. Healing is definitely slower than with nontuberculous wounds.

Streptomycin is of great help. In cases deemed too far advanced for surgery, streptomycin is valuable in lessening the infection. The antibiotic alone will not result in a cure except with early superficial lesions, but if streptomycin is used in conjunction with surgery, the operative procedures need not be so extensive, the postoperative wounds are cleaner, healing is materially hastened, and the recurrence rate is lowered.

Perirectal Abscess

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THOROUGH understanding of the abscesses that develop in the perianal and perirectal regions will result in fewer postoperative complications as well as a more rapid and comfortable convalescence. These abscesses do not differ greatly from those found elsewhere, but a sound knowledge of the anatomic structure of the area is essential for diagnosis and treatment.

Most of the abscesses result from an escape of the organisms normally inhabiting the lower intestinal tract through the mucosal barrier into the surrounding tissues. Only a few are the result of an extension of an infectious process from adjacent structures. The once widely held belief that most infections in this area are of tuberculous origin has been discredited; it is now generally conceded that tuberculous infections exist only with a primary lesion elsewhere in the body.

The symptoms resulting from these abscesses are similar but differ in degree according to the location of the infection. Discomfort is always present and is usually what motivates the patient to seek medical aid. Referred pain is occasionally the most outstanding symptom and may be noticed in the bladder or as a low backache or a pain extending down the posterior aspect of either or both thighs.

Sudden alleviation of pain usually indicates that the abscess has extended to an adjacent area or has ruptured spontaneously into the rectum or through the skin surface. The degree of tenderness is usually determined by proximity of the abscess to the surface. Systemic evidence of a localized infection is usually more pronounced with the deeper types of abscesses. During antibiotic therapy, symptoms are ordinarily held in abeyance and diagnosis is delayed.

Adequate and prompt surgical drainage is the one satisfactory form of treatment for abscesses in the perianal and perirectal area. This can be accomplished only with good regional or general anesthesia. A small stab incision is justified only for temporary relief from pain and to prevent extension resulting from pressure within the cavity.

The location of the abscess determines the avenue of approach and the extent of the incision is limited solely by encroachment upon the important structures in the area. No attempt should be made to obliterate the internal opening at the time of abscess drainage unless the infection is superficial to the external sphincter.

All shelves and pockets in the cavity should be eliminated and the skin edges widely trimmed to promote healing from the base. Packing is justified only to control bleeding immediately after the operation; the most effective way of preventing premature healing of the cavity is wide drainage.

The surgeon's responsibility does not end with the evacuation of the pus. A well-performed operation is of little value if the postoperative care is indifferent. Packing should be removed in about twenty-four

hours and the cavity explored digitally every few days to prevent uneven and premature healing. Early ambulation and sitz baths are usually sufficient to avoid the accumulation of purulent material in the cavity. Antibiotics are of little value unless the infection is complicated by organisms not usually found in the terminal bowel.

Unless the internal opening was obliterated when the abscess was drained, a fistula usually persists. The patient should be informed that a second surgical procedure may be necessary.

Gonorrhea, Syphilis, Granuloma Inguinale, and Chancroid

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PRECISE diagnosis of the initial lesion of any of the granulomatous diseases of the anorectal region is made by identifying the specific causative agent. Gross description of finer details of the lesions is essentially academic and misleading, since they resemble one another and two or more often appear concurrently.

Gonorrhea—The demonstration of the gonococcus on the smear by the Gram stain is possible from an anal superficial ulceration or from the lower rectum but will verify the diagnosis in only a few cases. A culture for the gonococcus is by far the most satisfactory method.

The lesion may be a superficial ulceration of the anal region with purulent material exuding from the rectum. The lower part of the rectum is involved most often and the disease appears as acute proctitis or as acute cryptitis. The condition is more common in females and may be associated with homosexuality in males or abnormal sex activity in women. A positive culture of the gonococcus may be obtained in cases with minimal or no symptoms or signs.

Treatment consists of penicillin by intramuscular injection of 300,000 Oxford units each over a period of three days. As little as 50,000 units of penicillin by a single intramuscular injection can cure, but the larger dose is safer. No local treatment is advised.

Syphilis—Primary and secondary syphilitic lesions about the anus and in the rectum can be diagnosed by finding the *Treponema pallidum* on darkfield examination or by inguinal gland puncture. The Wassermann reaction in the early stage will be negative and of little value. The test must be repeated for verification.

Biopsy of the tertiary lesion will confirm the diagnosis of gumma; the Wassermann reaction will also be positive.

Lesions seen in the anal region vary from chancre to condyloma latum, syphilitic fissure, and, finally, gumma. A chancre in the rectum is rare. Syphilitic proctitis and so-called syphiloma anorectale are actually due to lymphogranuloma venereum and mistakenly called syphilis. A rare case of proctitis may be the result of syphilis. In late neurosyphilis, the anal sphincter may be unusually relaxed.

Therapy is penicillin by intramuscular injection. Various schedules are advised; in general, 15,000,000 Oxford units in divided doses on alternate days over a three-week period suffices.

Granuloma inguinale—The demonstration of the Donovan body on smear from the lesion is possible in over 95% of cases of granuloma inguinale. An intradermal reaction test can be used for confirmation. The Wright stain or Jenner-Giemsa stain will suffice. These bodies may also be demonstrated in monocytes in biopsy smears.

The lesions appear as fleshy, heaped-up granulating areas involving the anus and not the rectum. Apparently stratified squamous epithelium alone is involved. The lesion may have spread from the groin or have begun as a primary lesion about the anus through pederasty.

The most effective treatment is terramycin or streptomycin, 250 mg. every four hours for five to seven days. Occasionally, surgical removal is necessary in resistant cases. Surgical reconstructive procedures in cases of severe scarring may also be utilized.

Chancroid—Ducrey's bacillus, the causative agent of chancroid, can be demonstrated on smear from the edges of a lesion by the Gram stain as a gram-negative streptobacillus in a "school-of-fish" arrangement. A much better method is the Unna-Pappenheim stain. The bacilli are easily found in about 90% of cases. Ducrey's vaccine intradermal test is an additional aid in diagnosis.

Ulcerations, usually unclean and superficial with little induration, are associated with autoinoculated contact lesions. Local lymph nodes are involved and may form chancroidal buboes. The local lesions are limited to skin surfaces about the anus and never involve the rectum.

The definitive treatment is sulfadiazine or any other oral sulfonamide; 1 tablet, 0.5 gm., taken four times a day for two weeks is curative in all cases. To date, no case resistent to this form of treatment has been reported.

The antibiotics have a questionable effect on chancroid and are not recommended. Surgical intervention is unnecessary and contraindicated in this condition.

Lymphogranuloma Venereum

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THE initial lesion of lymphogranuloma venereum occurs in the male on the glans penis and in the female on vulva, vaginal wall, or cervix, with early involvement of the inguinal glands. The infection enters the rectum and perirectal tissues by a complicated system of lymph channel anastomoses.

At first, a simple proctitis, with or without inguinal adenitis, develops, followed by ulceration and, later, scar tissue, which causes the classical lesion found in fibrous inflammatory strictures of the rectum. The thickening involves all layers of the rectal wall including the perirectal tissues. In some instances, the rectosigmoid and colon may be affected alone; in others, upper colonic lesions may be combined with rectal

involvement. At times the condition is mild and causes few or no signs or symptoms; in other cases the disease is very serious. Different strains of the virus have been found, which may explain the variations and degree of symptomatology observed.

In this country, Negro women are chiefly affected. Sodomy is considered by some to be a factor in the spread of this disease.

A determining factor in the causation of strictures of the rectum is unquestionably the disturbance of the lymphatic flow caused by the infection. Lymphostasis plays an important part in the pathogenesis of these strictures in three ways: [1] blockage of the lymph glands and interference with the adequate lymph drainage, [2] involvement of the lymph channel walls, and [3] a specific scar-tissue producing action of the virus. Superimposed on well-developed stenosis is a secondary bacterial invasion which causes a swelling of the mucosa and thus proportionately diminishes the rectal lumen. When the rectal lumen narrows sufficiently, the onward passage of feces is obstructed, adding to the mucosal and physiologic pathology.

Rectal strictures vary in shape, length, and location and may be soft, firm, hard, or scirrhous. Strictures may be simple or combined, annular, tubular, single, or multiple. The anus alone may be involved, or the rectum, rectosigmoid, sigmoid, descending colon, or the entire colon. The lesions may be associated with inguinal adenitis, anal tumors, elephantiasis, fistulas, or parametritis. Carcinoma, usually of the epidermoid type, is often superimposed on some of these lesions. The frequent association may indicate that lymphogranuloma venereum is a carcinogenic agent. Other associated conditions may be syphilis, gonorrhea, chancroids, and, sometimes, tuberculosis.

Diagnosis—If the lesion is in the lower rectum, which is the case in most instances, the diagnosis is easily made by a simple rectal examination with the gloved finger. External stigmas of rectal strictures are elephantiasis of the vulva, anal tags, fistulas, fissures, cockscomb or papillomatous anal tumors. Proctoscopic and sigmoidoscopic examinations are necessary when the disease is in the upper rectum and the rectosigmoid. When the lesion is above the sigmoid, a barium enema is the diagnostic procedure.

The symptoms, which may occur singly or combined, are constipation alone or alternating with diarrhea, rectal bleeding, ribbon stools, abdominal pain, purulent discharge, and pain on defecation. The Frei test should be used in all cases. Reversal of the albumin-globulin ratio is suggestive. Biopsy and virus isolation studies should be done when possible. Occasionally, acute intestinal obstruction occurs and is a serious omen necessitating immediate care.

Ulcerative colitis, carcinoma of the rectum, diverticulitis, and amebic dysentery have to be considered in the differential diagnosis.

Treatment—Aureomycin and terramycin have proved of curative value in the early stages of the dis-

ease. Chloromycetin is reported to be of value. Antibiotics are very useful when the virus can be reached by the blood stream, but they cannot remove scar tissue and therefore are to be considered an adjunct to adequate surgery if marked stenosis of the rectum has occurred.

Surgery is indicated once a firm, fibrous, obstructive, inflammatory stricture of the rectum has developed. Turell's electrothermic excision of thin, diaphragmatic, low strictures seems promising and is worthy of extensive trial. In anal strictures, Keller's tunnel skin grafts have proved of value. ACTH has been used by us in a few cases without any apparent success.

Colostomy is the customary operation when bowel movement is seriously obstructed. Pauchet's excision operation with preservation of the sphincter is the most satisfactory method when the stricture is in the lower two-thirds of the rectum. Edwards and later Barber and Murphy advised abdominal perineal excision of the diseased rectum and sigmoid after a preliminary colostomy. This serious and extensive procedure is not to be recommended.

If the disease is sufficiently extensive, the Breidenbach-Slattery staged operation is to be preferred in selected cases. Preoperatively, antibiotic and vitamin therapy is instituted.

Proteins and fluids should be given to correct any electrolyte or protein imbalance. Anemia is corrected by antianemia agents or blood transfusions. Surgery in these cases should be undertaken only by skilled colorectal surgeons.

Parasitic Diseases

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Of the symptoms which bring patients to the proctologist, those suggesting parasitic disease are diarrhea, anal pruritus, emergence of worm-like objects from the anus, and rectal bleeding.

Diarrhea of parasitic etiology is usually produced by one of the pathogenic protozoa: *Endamoeba histolytica, Dientamoeba fragilis,* or *Giardia lamblia. E. histolytica* infections are discussed in another article in this Symposium.

D. fragilis is capable of producing colitis, but does not affect other organs. The infection is treated with oral amebicides. Since no cyst form exists, the protozoa can be found only when fresh diarrheal stools are examined. Because this type of examination is frequently omitted, the prevalence of *D. fragilis* is generally underestimated.

G. lamblia is a flagellate which affects the small intestine and may cause chronic diarrhea and other gastrointestinal manifestations. Treatment is with atabrine.

Anal pruritus is the usual manifestation of *Enterobius vermicularis* infection. Although more common in children, pinworm is not rare in adults, especially household contacts of infected children. The worms deposit eggs on the perianal skin, not in the intestinal lumen. Hence, results of stool examinations are usually negative.

The proper method of diagnosis

is to obtain material from the perianal skin by either the cellophane swab or Scotch tape method. The standard specific is gentian violet. Recently terramycin has also been found effective.

Emergence of worms from the rectum occurs with *E. vermicularis* and also with *Ascaris lumbricoides* and tapeworm infections. Worms may migrate out spontaneously or be passed with the stools.

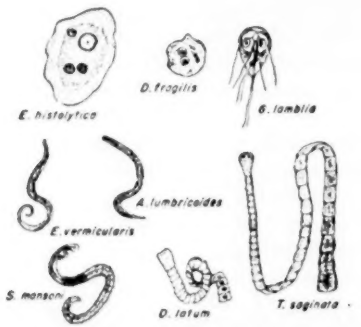
A patient who reports the passage of worm-like objects should not be referred to a psychiatrist if stool specimens are negative. Such negative findings often occur not only with pinworm infestation but also with *Ascaris* and *Taenia saginata* (beef tapeworm) infections. In the case of *Ascaris,* no eggs will be found if the patient has passed all the worms or has only males left.

With the beef tapeworm, the segments usually discharge eggs only after they are passed. Diagnosis is best made by having the alleged segments brought in. *Diphyllobothrium latum,* the fish tapeworm, deposits large numbers of eggs in the intestine. The eggs are easily found in the stools.

Among the parasitic diseases, *bleeding from the rectum* is most often due to *Schistosoma* infections. *S. mansoni* is being seen with increasing frequency in the continental United States because of the presence of individuals from the endemic areas of the West Indies and South America. The fluke produces a chronic disease, the late manifestations of which occur after fifteen or twenty years. Rectal bleeding is a common manifestation during the early years when colonic symptoms predominate. Sigmoidoscopy will frequently show characteristic hemorrhagic erosions of the mucosa. Later, hemorrhoids from hepatic cirrhosis may occur.

The diagnosis depends on finding the lateral-spined eggs. These are usually not numerous and are often missed unless concentration methods are employed. The eggs may also be found in snips taken from the rectal mucosa, a more efficient procedure than stool examination provided the entire specimen is examined; if only histologic section is done, the eggs may be missed.

Treatment is intramuscular Fuadin or intravenous tartar emetic.



Amebiasis: Medical Aspects

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AMEBIC colitis is a protozoan infection of the large bowel produced by *Endamoeba histolytica.* The clinical picture is extremely variable, with acute and chronic phases.

Because many physicians still regard amebiasis as a tropical dysentery, many chronic and subacute states go undiagnosed. The patients are often classified as neurasthenics or their symptoms of many years' duration are ascribed to "spastic colitis."

As an invariable rule, we examine a warm purged stool of every patient with intestinal symptoms undiagnosed by usual procedures. The finding of *E. histolytica* in many of these cases is not surprising in view of the known high incidence of amebic infestation in the temperate zones.

The motile vegetative form, or trophozoite, of *E. histolytica* is the only form of ameba which invades the bowel wall. The *Dientamoeba fragilis,* although it does not invade tissues, may nevertheless cause bowel discomfort and digestive disturbances in some patients. It does not form cysts. *E. histolytica* secretes a resistant capsule which forms cysts that are discharged in the feces of the host. These cysts are resistant to cold and are transmitted by food, fingers, flies, water, or direct contact. The trophozoites are destroyed by hydrochloric acid and the digestive enzymes and are not important in transmission.

After cysts of *E. histolytica* are ingested, lesions occur frequently in the cecum, ascending colon, sigmoid, and rectum. The characteristic early lesions are shallow ulcers with a necrotic base and a narrow surrounding zone of hyperemia with intervening normal mucosa. These ulcers extend into the submucosa. The crater becomes deeper and has undermined edges raised above the level of the surrounding mucosa. Secondary bacterial infection occurs rapidly, resulting in edema and leukocytic invasion.

Endoscopy often fails to reveal active amebic infection of the subacute and chronic varieties, since ulcers are much more frequent in the cecum and hepatic flexure than in the rectosigmoid. But in the more acute dysenteric cases, lesions may be observed in the terminal bowel. Early in the disease these appear as minute, yellowish spots surrounded by a narrow zone of hyperemia. Each represents a tiny amebic abscess of the mucosa; if the contents are expressed, enormous numbers of trophozoites are found.

Later in the course of the disease, the abscesses may coalesce to form typical amebic ulcers with undermined edges. The trophozoite of *E. histolytica* may be found in scrapings from the base of the ulcer or may be identified in stained preparations from a biopsy specimen of the edge of the ulcer. With repeated untreated attacks of amebic diarrhea, a chronic dysentery may result from mixed infection of the colonic wall by bacteria and *E. histolytica.* The colon becomes progressively scarred and deformed and the clin-

ical and sigmoidoscopic picture may simulate that of chronic bacillary dysentery or of chronic idiopathic ulcerative colitis.

The most frequent complication of amebiasis is hepatitis or liver abscess. Very rarely, involvement of the lung, brain, and skin may occur. An amebic granuloma of the colon may sometimes closely resemble carcinoma.

The symptoms of amebiasis are extremely variable. Some adysenteric carriers are apparently symptomless, but many have lassitude, loss of weight, constipation alternating with slight diarrhea, minimal rectal tenesmus, and colicky pains often associated with tenderness in the right lower quadrant of the abdomen, simulating appendicitis. Severe constipation may be the only symptom.

The diagnosis of intestinal amebiasis is made by the finding of *E. histolytica* in a purged stool examined immediately after passage. Often many specimens must be examined before the parasite is identified. If there are good clinical grounds for the diagnosis, a therapeutic trial with amebacides may be indicated even when no parasites are found.

Emetine hydrochloride administered in doses of 1 gr. (0.065 gm.) subcutaneously for seven days should be employed only for active bloody diarrhea. The dysenteric manifestation will disappear promptly but *E. histolytica* will not be eliminated. The circulatory system must be carefully observed during the administration of emetine.

Diodoquin is very effective in curing the intestinal infection and is given orally in 10-gr. (0.65-gm.) tablets four times daily for twenty days. This may be followed by carbarsone, 4 gr. (0.25 gm.) three times daily for ten days. Recently, Milibis has been employed in doses of 7½ gr. (0.5 gm.) three times daily for seven to ten days. Carbarsone and Milibis are arsenicals and may have toxic effects.

Bacitracin has been found effective, but the rate of recurrence is high. Aureomycin and terramycin are also very effective, but may themselves produce bowel symptoms. In the author's experience, Diodoquin results in the greatest percentage of cures and is least toxic.

Amebiasis: Surgical Aspects

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AMEBIASIS is a much more common condition than is generally considered. Some authorities believe that at least 10% of the population of the United States have the disease. Undoubtedly the increased incidence today is due to the fact that many soldiers contracted amebiasis in the South Pacific. Amebic infection of the colon is not a surgical entity but may produce symptoms that simulate many surgical conditions and may cause complications that should be treated by surgery.

Amebic lesions with surgical significance may be classified as [1] intes-

tinal lesions, which include appendicitis, perforation with peritonitis, massive hemorrhage, ameboma or amebic granuloma, cicatricial stenosis, and pseudopolyposis, and [2] extraintestinal lesions, including pleuropulmonary infections, hepatic, cerebral, and splenic abscess, cutaneous ulcerations and abscess, and genitourinary infections.

Intestinal lesions

Appendicitis—The vermiform appendix can be involved in the amebic infection as well as other parts of the intestines, and amebic appendicitis may occur as an acute, suppurative, or chronic inflammatory process. Acute amebic appendicitis is rare but can be suspected preoperatively. Chronic amebic appendicitis is likely to be overlooked.

In approximately 10% of our cases of chronic appendicitis, amebas or amebic cysts are found in the stool and complete relief of symptoms follows antiamebic therapy. Therefore, careful stool examination is essential in all cases of suspected chronic appendicitis. In the subacute and acute manifestations, in which the lesion is seldom limited to the appendix, emetine should be given because it does not produce intestinal irritation or increase peristalsis. If suppuration is suspected, operation is indicated.

Perforation with resulting peritonitis is fortunately rare. It occurs in the severe, rapidly progressive, or fulminating case. The prognosis is extremely poor. Treatment consists of administration of amebacides and abdominal exploration.

Massive hemorrhage is an infrequent but serious complication, being associated with the rapidly progressive and fulminating type of infection. Ultraconservative treatment is essential and consists of the administration of amebacides together with massive transfusions.

Ameboma—Amebic granulomas appear most often in the cecum, sigmoid, or anorectal region and are the result of invasion of the bowel by *Endamoeba histolytica* associated with secondary infection. The lesion consists of a large granulomatous inflammatory mass, associated with small central abscesses. Considerable fibroplastic proliferation occurs.

Because of the site of involvement and the tumefaction, the lesion is frequently diagnosed as a neoplasm or as other granulomas, such as tuberculous or actinomycotic. The finding of amebas in the stool in patients with tumefactions in these areas does not necessarily confirm the diagnosis of ameboma, because amebic infection may coexist with a malignant lesion. Treatment should consist of the administration of amebacides followed by extirpation, because the possibility of a malignant lesion cannot be ruled out and also because, with the cicatrizing nature of ameboma, healing results in obstruction.

Cicatricial stenosis—As a result of repeated acute inflammatory attacks and healing with fibrous tissue replacement, stenosis of the colon can occur. This may be limited to a single segment or may involve extensive portions. Generally the obstruction is largely a result of associated secondary infection. Because of the progressive nature of the con-

dition, extirpation of the stenotic area should be done after preliminary amebacidal and antibacterial therapy.

Pseudopolyposis—As a result of repeated ulcerations of the colon and subsequent healing with excessive epithelial hyperplasia, pseudopolyps may develop. The lesions may be limited to a segment or may involve the entire colon. Treatment consists of the preoperative administration of amebacides followed by excision.

Extraintestinal lesions

Hepatic amebiasis—Of very great importance to the surgeon is amebic infection of the liver. In a twenty-year period, we have seen 263 cases of amebic hepatitis and hepatic abscess, which represent 11.1% of all cases of amebiasis.

Amebic involvement of the liver is the result of amebas' gaining entrance to the liver through the portal vein. The first lesion produced is acute hepatitis, which may be followed by necrosis and liquefaction and an abscess. Amebic hepatic abscess is generally single and most frequently involves the right lobe. Diarrhea or a history of diarrhea is absent in a third or more of cases.

Principal manifestations of hepatic amebiasis are liver pain and tenderness, fever, hepatomegaly, weight loss, weakness, and chills. Amebas were found in the stool in 45% of our cases, and in 15.4% of the collected cases. Characteristically, there is a moderate leukocytosis in contradistinction to the pronounced leukocytosis seen in pyogenic hepatic abscess.

Roentgenography is the most valuable diagnostic method and shows elevation of the right diaphragm in medial and anterior portions. The diagnosis is finally confirmed by aspiration of "chocolate sauce" pus from the suspected abscess.

The treatment of amebic hepatitis consists of the administration of emetine which, although only amebastatic, will control the acute infection. A grain of emetine is given daily until 6 to 8 gr. are given. The drug must be used cautiously because it is a protoplasmic and a muscle poison. Recently, chloroquine and aureomycin have been used for the treatment of amebic hepatic abscess.

In cases with no suppuration but hepatitis only, symptoms quickly subside with this therapy alone. However, in a case with actual suppuration, little or no improvement will follow emetine administration, and the abscess must be evacuated by aspiration. Because an amebic hepatic abscess is usually sterile, open drainage is contraindicated because it permits the introduction of the pyogenic organisms into a large area of hepatic necrosis.

Aspiration should be done, employing sterile precautions and always in an operating room. As much of the exudate should be removed as possible. Open drainage is done only in cases with secondary infection.

Pleuropulmonary complication is sometimes observed, consisting of pulmonary abscess extending from a hepatic abscess, bronchohepatic fistula, and empyema extending from a hepatic abscess.

Prepared for Modern Medicine

Treatment of Hemorrhoids

Injection Therapy

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IN the past there have been many questions as to the injection treatment of hemorrhoids, but time and usage have established certain facts.

The object of such therapy is to produce, by irritation with a chemical sclerosing agent, sufficient fibrosis to shrink the network of dilated blood vessels forming the hemorrhoids, without causing sloughing of tissue. The sclerosing agent causes the delicate endothelial cells that line the dilated venous plexuses to disappear rapidly and be replaced by connective tissue cells. The scar tissue tends to contract and, in contracting, to obliterate the dilated veins, causing shrinkage and disappearance of the hemorrhoids.

The injection treatment of hemorrhoids is a surgical procedure and is not without danger. It should not be used by one who lacks knowledge of the anatomic structures involved or familiarity with the procedure. Injection of solution too low or too much in one place or into the surrounding tissues, or failure to follow strict aseptic technic, may cause sloughing followed by hemorrhage or ulceration.

Operation and not injection ought to be done when other lesions or complications are present.

Anatomically, two distinct types of hemorrhoids exist: external and internal. Only internal hemorrhoids are suitable for injection. The external hemorrhoidal plexus is an indistinct ring or circular mass around the anus, so arranged that it is impossible to inject the varicose structures without getting most of the solution into the surrounding tissue. This results in incomplete sclerosing of the venous plexus and occasional sloughs and abscesses. The very rich nerve supply to the anus is through the cerebrospinal nervous system which, next to the eye, is the most sensitive area in the body. Injection of a sclerosing agent into this region causes intense pain. Therefore, external hemorrhoids are not suitable for injection.

The principal contraindications to sclerosing therapy of internal hemorrhoids are: fissure-in-ano; strangulated irreducible sloughing; gangrenous internal hemorrhoids; ulceration, stricture, or acute or subacute inflammation of the anus or rectum; new growths; sensitivity to the sclerosing agent; or other marked allergic conditions. Some of the foregoing contraindications may be corrected, changing an unsuitable case into a suitable one.

The size of the varicosity of the internal hemorrhoidal plexus makes little difference in the results of treatment. Injection should be made through an anoscope well above the mucocutaneous junction.

If a sufficient number of injections are properly made under the mucosa

over the hemorrhoidal mass or into the center of the pile, a permanent cure may be expected in 60 to 75% of suitable cases. Usually, about four injections into each hemorrhoid are made at two- to three-week intervals or after all induration from previous treatment has subsided.

When certain physical, financial, or other conditions prevent operation, injection treatment may be used as a palliative measure to decrease or control protrusion and bleeding. Patients with hemophilia are probably better treated by injection than by operation. In such cases precautions against overtreatment should be observed and the smallest possible caliber needle used.

The sclerosing agents most commonly used are carbolic acid and quinine urea hydrochloride. The strength and diluents of the solution, the amount, and the point and method of injection are matters upon which opinions differ.

The oldest and most commonly used sclerosing agent is carbolic acid in strengths of 5 to 20% in glycerin and water, oil of almond, or other vegetable oil. Nonabsorbable oil or mineral oil should not be used; it remains in the tissue as a foreign body or an oil tumor.

If carbolic acid is to be the sclerosing agent and injection is to be made into the center of the hemorrhoidal mass and all hemorrhoids are to be injected at each treatment, the following solution has served me better than any other tried in forty years:

Carbolic acid (liquid)	℥ i
Glycerin	℥ iii
Aqua	℥ iv

This makes about a 12% phenol solution. From 3 to 6 minims is injected into the center of each hemorrhoidal mass, well above the mucocutaneous junction. All internal piles are injected. The second treatment is not given until all reaction or induration has disappeared—usually within about three weeks. Three to four treatments into each hemorrhoid will be nesssary for complete sclerosis.

If the sclerosing agent is carbolic acid and a submucous injection is to be made, a vegetable oil is the preferred vehicle, oil of almond being the most frequently used. From 5 to 10% carbolic solution is employed; 1 to 4 cc. of the agent is injected under the submucosa over each hemorrhoid.

Quinine urea hydrochloride in 5% aqueous solution has been popular since its introduction in 1913. When used submucously, 1 to 4 cc. is injected over each hemorrhoid, and usually 1 or 2 hemorrhoids are injected at a treatment. If the injection is made into the center of the hemorrhoidal mass, 0.5 to 1 cc. is injected into each hemorrhoid and all hemorrhoids are injected at one treatment.

Surgical Treatment

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SINCE the results with the injection method are unpredictable, I prefer to treat hemorrhoids by surgery. Because of the usual presence of many skin folds and tags about the anal margin and of prolapsing tissue within the anal canal, the removal of hemorrhoids is a plastic operation.

Surgery should be used for external hemorrhoids, internal hemorrhoids, or combinations of the two. Success in relieving the symptoms is dependent on several factors, including:

- *Proper selection of cases for surgery.* Surgery should be deferred until further diagnostic work has been done in cases of edematous skin tags with a pruritic skin and very little if any demonstrable anal pathology, indefinite anorectal symptoms out of proportion to the pathology present, epitheliomas, and chancres.
- *Adequate operative procedure.* The operation should eliminate local etiologic factors, remove the pathology, and relieve the patient's symptoms. Careful handling of tissues is essential. Divulsion and forcible dilatations are to be avoided.
- *Adequate postoperative care.* Anal contracture and stricture, too frequently following routine hemorrhoidectomy, may be prevented by proper after care.

External skin tags are usually the sign of pathology within the anal canal. The removal of external tags without surgery within the anal canal is usually not indicated. However, when external hemorrhoids become thrombosed, the thrombosed area, depending upon the size, with the redundant skin tissue, should be excised widely.

The thrombosed area within the tissue should be excised and not incised. This is best accomplished with infiltration anesthesia. An elliptic piece of skin overlying the thrombosed area is first excised, then the thrombosed area is lifted from its bed en masse, using sharp pointed scissors curved on the flat to dissect the area from the fascia and muscle. Any clots lateral to the incision should be lifted out. Hemostats and sutures are rarely necessary. A small wick of gauze is left in the incision to prevent sealing of the skin edges. The gauze may be removed on the second or third postoperative day.

This is an office procedure and no disability should follow. When the thromboses are multiple and involve the entire anal circumference or extend into the anal canal above the anorectal line, complete hemorrhoidectomy should be considered.

In removal of internal hemorrhoids and of internoexterno hemorrhoids, a number of factors must be considered:

Anesthetic agent—A good anesthetic produces complete relaxation of the levator and sphincter muscles so that the operative field is easily and properly exposed. Sacral block is usually preferable but is difficult to induce. Other procedures include:

Intravenous—Sodium Pentothal (curare)
Low spinal
Inhalation
Infiltration

Position of the patient—An exaggerated Sims gives the best exposure and permits assistants to help at the operation. The patient may also be placed on the abdomen with hips elevated.

Lithotomy is the preferred position when fistulous tracts involve the perineum or scrotum. For performing a hemorrhoidectomy, the lithotomy position is awkward.

Any operative procedure which removes the pathology, relieves the symptoms, is not accompanied by complications such as postoperative pain, infection, hemorrhage, anal contracture, incontinence, or pro-

longed convalescence, and leaves a smooth perianal skin should be considered acceptable.

The following procedures are used:

Open operations

Classic ligature operation—modifications of the Salmon operation

Hirschman ligature operation

Electric methods such as galvanism, electrocoagulation, and electrodesiccation

Closed operations

Crushing—obsolete

Clamp and cautery—should be obsolete

Excision over a clamp and closure

Excision without clamps with closure of the incised area

Whitehead operation—obsolete, or should be

Combinations of open and closed

The mucosa is closed but a portion of the incision is left open.

My personal preference is a ligature type of operation.

Technic—For a right-handed operator, the patient is placed in an exaggerated Sims position on the left side. A modified Sims speculum is used for exposure of the anterior and lateral walls of the anus and rectum and an enlarged and modified Richardson speculum is used to expose the posterior area.

The hemorrhoid to be excised is exposed, and without lifting it from position, an incision is made from the upper pole along the lateral sulcus, extending across the anorectal line onto the skin, to include the skin tag. A similar incision is made on the opposite side of the hemorrhoid; the 2 incisions meet in a "V" on healthy skin.

The tip of the tissue forming the "V" is grasped with a hemostat and, with a sharp knife or pointed scissors curved on the flat, the external and internal hemorrhoid is dissected from the outer tip of the incision off the fascia covering the subcutaneous portion of the external anal sphincter. Then careful dissection is made of the skin tissue from the intermuscular septum; the fibers of the internal sphincter are exposed.

By sharp dissection, these muscle fibers are released from the posterior wall of the pedicle to be formed. As these fibers are released from the posterior surface of the internal hemorrhoid, the bulging hemorrhoidal mass is felt to give or come down and traction is then made on normal mucosa above the mass. This completes the dissection of this area.

When this point is reached, the pedicle of the hemorrhoidal mass is narrowed so that it contains only the blood vessels supplying the area and a very narrow strip of mucosa. A ligature, 0 plain catgut, is placed at the upper and narrowest part of the pedicle. The tie should be on the bowel surface. This one tie usually controls all the bleeding.

The hemorrhoidal mass is excised below the tie, leaving a stump ¼ in. long. If the muscle has been carefully dissected, there will be no tension on the tie and consequently no postoperative bleeding. If the muscle is included in the tie, however, the muscle may retract, releasing the tie and causing bleeding. If the pedicles are properly narrowed, and the ties are staggered, the lumen will not contract. Bleeding from the bed from which the hemorrhoid was dissected can be controlled with fine

pointed hemostats and very fine ties. Ties should not be buried or include mucosa or skin.

The usual hemorrhoid operation requires only ties on the pedicles. No attempt is made to close the incision. The sphincter muscle, when it regains tone, closes the incision. All hemorrhoidal masses are excised in a similar manner, so that columns of healthy mucosa are left between the excised areas.

The anal area is then "landscaped." Redundant edges of skin and mucosa are trimmed. Varicosities under mucosa and skin edges are excised. Small satellite internal hemorrhoids between the larger excised areas are excised with the curved-on-the-flat scissors. Very few of these areas have to be tied to control bleeding.

The columns of normal mucosa remaining between the areas of excision are inspected. Skin tags and folds which have not been included in the first excision are removed. Finally, 0.5 oz. of an anesthetic and antiseptic ointment is left in the rectal ampulla. A Penrose drain is inserted to separate the unhealed areas and a wedge-shaped pressure dressing is applied. The drain is removed in twenty-four hours.

Postoperative orders—On the day of operation, A. P. C. compound with codeine (acetylsalicylic acid, acetophenetidin, caffeine citrate, and codeine sulfate) should be given for pain, repeated, if necessary, every three to four hours. In the unusual case in which relief is not obtained, morphine sulfate, ⅙ to ¼ gr., is given hypodermically.

The patient may be up to void. If difficulty is experienced in voiding, the dressing may be loosened. If the patient is still unable to void, he should be catheterized as often as necessary.

The patient is up and about as desired on the day after operation.

A high-residue diet is started the day after operation. Water is given when desired.

Mild catharsis is started on the first postoperative day. Hot sitz baths are used routinely after any stool, twice daily otherwise.

The patient usually leaves the hospital on the third or fourth postoperative day.

Prepared for Modern Medicine

Injuries, Perforations, and Foreign Bodies

HAROLD LAUFMAN, M.D.
Northwestern University, Chicago

WOUNDS of the extraperitoneal rectum are prone to occur in conjunction with other injuries. The entry wound need not be near the rectum and may have dominating symptoms so that the rectal injury may be incompletely investigated.

Bleeding from the rectum may not be easy to evaluate after it has ceased. Determination of rectal perforation, not disclosed by palpation, is best done by proctoscopy.

Adequate treatment for small extraperitoneal rectal wounds consists of drainage by either a parasacrococcygeal incision or a curved transverse incision below the tip of the coccyx. Removal of the coccyx does not accomplish drainage of the perirectal space and is best not done unless the coccyx has been injured or reconstructive suture cannot be otherwise accomplished.

The wound tract should be adequately debrided. The endopelvic fascia must be incised in performing the drainage. A small rectal wound need not be sutured.

A colostomy must be done for diversion of the fecal stream. When the rectal perforation is small, a sigmoid colostomy will suffice. With destructive defects, the colostomy is made in the transverse colon; the left colon is then free for mobilization and a pull-through procedure can be performed later if part of the rectum has to be sacrificed.

Wounds of the intraperitoneal rectum and sigmoid colon are treated by laparotomy. Closure of the perforation, with or without debridement of the visceral defect and without narrowing the lumen, is mandatory. A proximal colostomy should accompany the repair if deep in the pelvis. A high wound may serve as the colostomy. Sometimes the wound can be sutured and the sutured area exteriorized. In wounds of the colon, the bowel must be mobilized from its retroperitoneal bed, lest a perforation be overlooked. A flank drain is occasionally indicated. Tetanus antitoxin, or a booster injection of toxid, and massive antibiotic therapy are given preoperatively.

Foreign bodies lodged in the rectum may enter through the mouth or anus. Orally ingested are such objects as fishbones, seeds, or fruit cores or items swallowed by patients with eating aberrations, such as razor blades or nails. Among objects entering from below are enema cannulas, thermometers, or bottles.

Objects in the crypts or free in the ampulla can be taken with forceps after anal dilatation or posterior sphincterotomy. The mucosa must be examined for lacerations or perforations. High-lying blunt objects may be extracted from below after milking down through a laparotomy incision. If the object is sharp or large, colotomy may be needed.

Prepared for Modern Medicine

Cause and Therapy of Coccygodynia

GEORGE H. THIELE, M.D.
Kansas City General Hospital, Kansas City

IN cases of direct injury, the pain in coccygodynia is usually localized in the coccyx. In about 85% of instances, however, the pain is in the sacrococcygeal joint or the muscles partially inserted into the lateral borders of the coccyx.

The chief causes of coccygodynia may be classified as [1] trauma, [2] anorectal infection or infection of the urethra, prostate, or cervix, the lymphatic drainage from these structures being into the pelvic lymphatics, [3] poor sitting posture, and [4] previous surgery. Coccygodynia is far less frequently of rheumatic or neuralgic origin than is commonly believed.

It will be noted that all the etiologic factors listed produce myositis or spasm of the levator and coccygeus muscles. Inasmuch as these muscles are inserted into sides of the coccyx, the spasm increases flexion and pressure upon the sacrococcygeal and intercoccygeal joints.

Patients with coccygodynia give a history of severe aching pain in the region of the coccyx. Intensity of the pain is augmented by continued sitting and is worse on rising from the sitting position. Although 60% of cases are the result of infection, the exciting factor is often a long automobile ride, long continued sitting, parturition, or slight trauma such as bumping against furniture.

Digital anorectal examination will reveal marked spasm of the levator and coccygeus muscles. Massage of the spastic muscles cures 60% of cases. The patient is placed in the left lateral Sims position. A finger is inserted into the rectum, its flexor surface lying across the bellies of the levator ani and coccygeus muscles. A gentle stropping motion is used back and forth lengthwise ten to fifteen times along the muscles from their origins in the lateral wall of the pelvis to their insertions in the lateral borders of the lower sacrum and coccyx.

Only as much pressure is used as the patient can tolerate. The patient should strain down.

Massage is repeated daily for four or five days, then every other day for a week, and gradually less often until pain has disappeared. Improvement is generally evident in ten days.

When pain has not been relieved by massage and medical treatment of existing foci of infection, and spasm is still present, surgical removal of the foci of infection should be done, followed by a course of massage. Anal ulcers, crypts, hemorrhoids, and fistulas should be removed with meticulous care, even though their gross appearance does not seem to warrant removal. Infected cervices should be cauterized.

Removal of the coccyx will not relieve coccygodynia unless the coccyx is diseased.

Prepared for Modern Medicine

Psychosomatic Aspects of Proctology

THOMAS P. ALMY, M.D.
New York Hospital–Cornell Medical Center, New York City

THE symptoms and signs of many patients who consult a proctologist are wholly or partly due to the bodily mechanisms which accompany emotional conflict. Just as the human face manifests emotion by involuntary frowning, blushing, or sweating, the human colon undergoes marked changes in motility, engorgement, and secretion during periods of emotional tension.

The occurrence of colonic symptoms, such as constipation or diarrhea, during temporary stress in

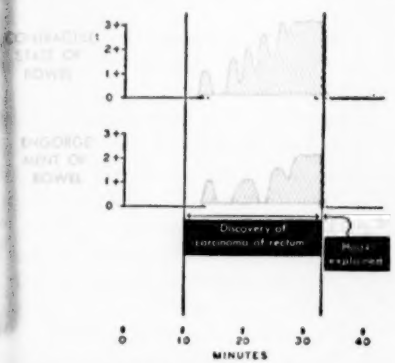

Fig. 1. Colon during fear of cancer

stable persons is well known. Observations on a number of colostomies have indicated that this coincidence is based upon very significant changes in the appearance of the colon. In the routine performance of proctoscopy, severe degrees of spasm and engorgement may disappear when the patient is reassured or may appear when he becomes embarrassed or acutely anxious.

During prolonged proctoscopic study of the sigmoid colon in 13 healthy medical students, we have regularly observed engorgement and occlusive spasm when severe pain was produced by putting the hand in ice water or compressing the head with a metal band. In all 13, the painful experience resulted in severe emotional conflict, which coincided in time with the colonic changes. In other subjects the stimuli were equally painful but not emotionally disturbing, and the appearance of the colon did not change.

In one subject being observed through the proctoscope, a hoax was designed to convince him that he had a carcinoma of the rectum. His colon then developed engorgement and marked spasm, as shown in Figure 1. A classmate was later subjected to the same hoax, but developed neither emotional tension nor colonic change, as he realized he was being used as a control for the former experiment. From these results it is evident that marked change in the colon is an expected accompaniment of emotional tension.

Similar changes accompany emotion in patients with "irritable colon." To show this, during prolonged proctoscopic observations, patients'

feelings were aroused by an unsympathetic interview, and the coincident changes in the bowel were noted. A 37-year-old German housewife (Fig. 2) became angry and defensive when it was suggested that her relatives in Germany had deserved to suffer as much as they had under Allied bombardment. Marked spasm and engorgement of the colon developed during the interview. These changes occurred at two other times when she spontaneously discussed matters which were emotionally disturbing to her.

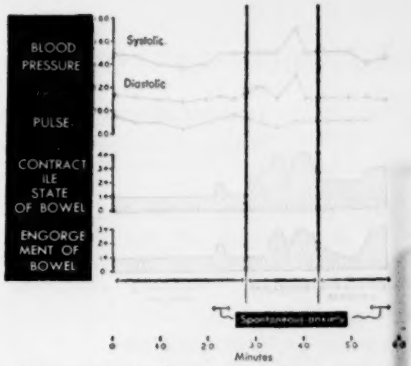

Fig. 2. Sigmoid reactions during stress

From these observations it has been concluded that the many patients with irritable colon may have marked changes in the form and function of the bowel for no other reason than tension or emotional conflict. We have locally adopted a semiquantitative scheme for recording these appearances, to stimulate accuracy in our observations (see table). These changes may be such as to suggest to the proctoscopist a diagnosis of nonspecific proctitis, lymphogranuloma venereum, low-grade diverticulitis, or ulcerative colitis. Failure to identify them as functional may lead to much ill-advised therapy.

The realization that the objective appearances of the irritable colon can be induced by emotional stimuli should lead us to give psychotherapy the leading role in the treatment of such patients. Since irritable colon is a common cause of bowel dysfunction, and since such disorders commonly predispose to a variety of proctologic conditions such as hemorrhoids, fissures, and prolapse of the rectal mucosa, these findings have wide implications for the pathogenesis of anorectal lesions.

SCHEME FOR RECORDING CHANGES IN COLONIC FUNCTION

Grade	*Contractile state*	*Engorgement*
0	Lumen over 3 cm. wide, large haustrations	Thin, pale mucosa, with major submucosal veins showing through
1+	Lumen 2 to 3 cm. wide, with smaller haustrations	Mild injection: smaller submucosal veins visible
2+	Lumen 1 to 2 cm. wide, with broad folds	Submucosal vessels obscured; diffuse pale pink mucosa
3+	Lumen occluded, but passable by manipulation	Medium rose color
4+	Lumen occluded; impassable	Bright red or purple

Prepared for Modern Medicine

Advances in Therapy of Rectal Procidentia

HARRY E. BACON, M.D., AND HOWARD D. TRIMPI, M.D.
Temple University, Philadelphia

THE outstanding trend in the modern management of procidentia or complete prolapse of the rectum is the acceptance of the abdominal approach as superior to the heretofore popular perineal methods.

Responsible for this avenue of attack has been the high recurrence rate following perineal procedures alone, plus the increasing safety associated with major abdominal operations involving the rectum and colon; mortality rates are reaching lower levels.

As a result the colonic surgeon has been able to broaden his armamentarium to include many methods of correcting prolapse. From these he can select the combination of procedures most applicable to the case at hand. Such a combination is superior to any single method.

Anatomy—Procidentia is a hernia of the sliding type and must be treated as such. Since most abdominal hernias are protruded through a defect in the transversalis fascia, we are not surprised to find the pelvic component of this connective tissue deficient at the site of greatest weakness.

This area is anterior to the rectum and allows the anterior rectum and peritoneum to protrude downward through the perineum. Small intestine may occasionally lie in the hernial sac. In advanced cases, the only check to extreme herniation is the mesorectum. The continuation of the transversalis fascia in the pelvis is represented by the endopelvic fascia, a sheet of connective tissue which forms the inner lining of the true pelvis and lends extensions which enclose the retroperitoneal pelvic viscera.

Beneath the pelvic peritoneum are two prominent condensations of this fascia which embrace the middle hemorrhoidal vessels and support the rectum by attaching to the anterolateral surfaces. These are known as the rectal lateral ligaments. They can readily be demonstrated and, when necessary, lend themselves to surgical revision. When these two ligaments are united anterior to the rectum, they are shortened and the support of the rectum is greatly enhanced.

Treatment—It is well known that many inguinal hernias can be permanently corrected by doing nothing other than reducing the sac and obliterating it through the abdominal cavity. This principle is applicable to procidentia and is illustrated by closure of the cul-de-sac which we employ consistently together with other measures.

Additional procedures are of value. In the female, shortening of the uterosacral ligaments, a maneuver that is accomplished by uniting these ligaments anterior to the rectum and

(Continued on page 138)

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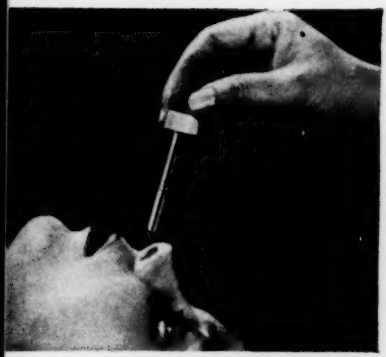

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*Thornell, W. C.: Arch. Otolaryng. 52:96 (July) 1950.

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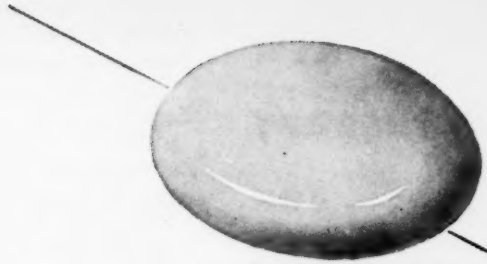

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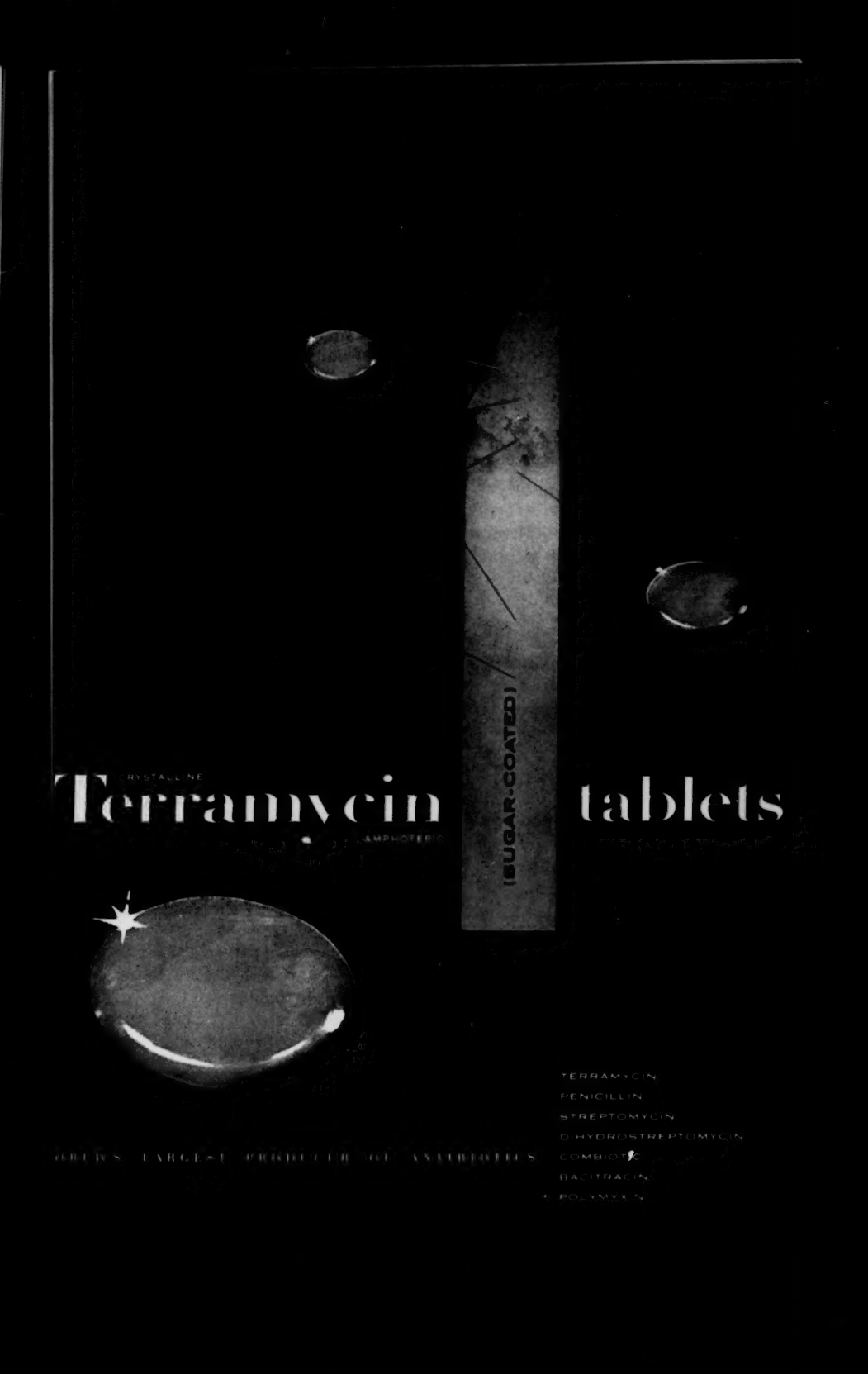
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posterior to the uterus, is of benefit. Suspension of the uterus has also been performed in many of our cases.

We have based much of our success upon the suspension of the prolapsed bowel. In itself, this measure is of little curative benefit, but it has a complementary value when undertaken to maintain hernial reduction until the newly apposed low pelvic structures can heal. By suspending the rectum, downward migration of the bowel is prevented and, although this check may be temporary, it allows for successful fixation of the revised perirectal tissues. In our experience, this suspension is best performed by first elevating the rectum from the low pelvis and then fixing the low sigmoid colon to the exposed tendon of the psoas muscle.

In 3 cases of severe procidentia, suspension was augmented by anterior resections of the upper rectum and distal sigmoid colon. In these cases fixation of the bowel to the psoas muscle tendon was also performed.

Surgical technic—Upon entering the abdominal cavity, the sigmoid colon is freed from its peritoneal attachments on the left and the dissection is continued down into the low pelvis.

Then a similar incision is carried down into the pelvis on the right. These incisions join each other in the depths of the cul-de-sac anterior to the rectum.

The rectum is then separated from the sacrum posteriorly and dissections are carried laterally, so that each lateral ligament is clearly demonstrated. The lateral ligaments are then drawn together anterior to the rectum, where they are approximated by interrupted sutures of fine silk or chromic catgut.

The elevated rectum is then suspended by attaching the distal third of the sigmoid colon to the tendon of the psoas muscle. Heavy silk is employed and 3 or 4 interrupted sutures approximate the antimesenteric taenia to the exposed tendon. The cul-de-sac is now obliterated by the use of purse-string sutures. Additional procedures such as shortening of the uterosacral ligaments and suspension of the uterus can be performed.

Statistics—In our series, 49 patients were operated upon for complete prolapse of the rectum. Perineal methods were used in 7 cases. The abdominal approach was employed for 42 patients; among these, three constant procedures were followed: [1] shortening of the lateral rectal ligaments, [2] obliteration of the cul-de-sac, and [3] suspension of the rectum through fixation of the sigmoid colon to the psoas muscle tendon.

In 3 cases anterior resection of the upper rectum and distal sigmoid colon was employed.

Among these 42 cases were 5 recurrences, an incidence of 11.9%.

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(1) Brit. Med. J. 2: 585-589, 1950; (2) Univ. Hosp. Bull., Ann Arb 15: 49, 1949; (3) J.A.M.A. 145: 66-71, 1951; (4) Am. J. Dis. Chil 80: 2, 1950; (5) Health Center J. (Ohio St. Univ.) 3: 1, 194 (6) Bull. New York Acad. Med. 27: 391, 1951.

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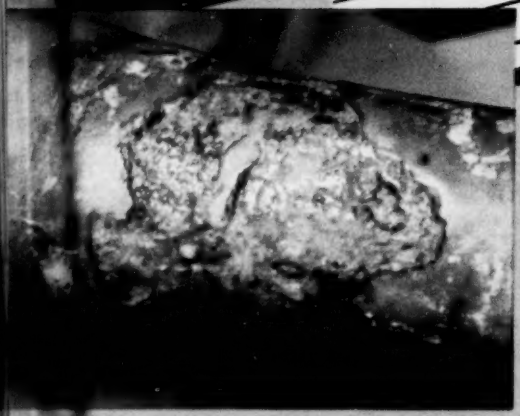
CASE HISTORIES...

CASE 43

J.K. Chronic Undermining Ulcer 26 Years' Duration



Before institution of Tryptar and after 26 years of unsuccessful therapy.

Patient sustained a hot-water burn on left leg at age 15. Five years later, following a slight trauma, ulcer developed which became progressively larger and deeper over period of 26 years... despite medical therapy (radon, sulfonamide, penicillin, chloresium, allantoin, zinc oxide ointments, irradiation, skin grafting). Photograph (left) shows ulcer covered by tenacious, greenish-yellow, offensive smelling exudate.

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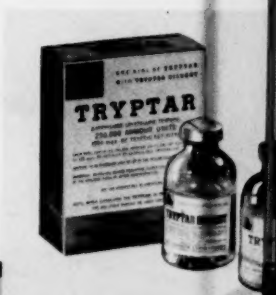

REFERENCES: (1) Reiser, H. G., et al.: Arch. Surg. 63: 568-575, 1951; (2) Reiser, H. G., et al.: Tryptar Debridement of Fibrinopurulent Empyema. Philadelphia, W. B. Saunders Co., 1950; (3) Reiser, H. G.: Personal Communication; (4) Roettig, L. C., et al.: Dis. Chest 21: 245-259, 1952.

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1. Kimble, S. T., and Stieglitz, E. J.: Geriatrics 7: 20, 1952.

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Pruritus Ani

NEIL W. SWINTON, M.D.
Lahey Clinic, Boston

PERIANAL itching is one of the commonest complaints encountered in medicine. The majority of patients can be managed by the general practitioner if sufficient attention is given not only to the local abnormality but to the patient himself.

An understanding by the patient of the nature of his disease, the possible etiology of his particular condition, and the fundamentals of the treatment to be utilized is essential in the successful management of these patients.

In general, radical surgery, injections, and radiation therapy are to be avoided. Surgical correction of obvious local anorectal disease, however, is extremely important, as is treatment of the associated secondary perianal dermatitis.

In many instances the pruritus is mild, transitory, and associated with obvious local or systemic disease. Sometimes correction of the local condition or control of the systemic disease is adequate for relief of the itching. However, many patients have a much more severe perianal pruritus which may be almost continuous and incapacitating. Such a syndrome presents a definite disease entity.

The natural tendency for the relief of anal itching is to rub or scratch the area. This, if continued, results in congestion, trauma, irritation, and the introduction of secondary infection in the perianal skin and adjacent tissues. Probably for this reason a high percentage of culture studies on the perianal tissues in patients with long-standing anal pruritus show fungous infections, which may be the most important factor in the chronicity and persistence of the disease entity.

Although the rubbing and scratching give temporary relief, the itching usually recurs, scratching is continued, and a scratch-itch reflex develops which, in the most severe cases, comes to be a definite fixation. The patient cannot sleep, cannot eat, and is continuously "itching, scratching or anticipating the next itch."

The anorectal region contains a sweat apparatus called the apocrine system which is a part of the sexual glandular system. This sweat contains protein and excess carbohydrate and is more alkaline than ordinary sweat. The apocrine system is peculiarly responsive to emotion, particularly sexual tension. This area with its high-protein, high-carbohydrate content is an ideal medium for the growth of various fungi and other secondary invaders.

Excessive carbohydrate intake further increases the local alkalinity of these parts. Excessive fruit juices in the diet and alcohol may be significant at times.

The importance of psychogenic factors in the background of intrac-

table cases must never be underestimated. Nearly every patient with severe, long-standing anal pruritus gives a history of episodes associated with tension. The relation of fatigue, worry, frustrations, family maladjustments, and financial upsets is frequently observed. Psychiatric help is rarely required, but with an appreciation by the patient of psychogenic factors, adequate rest and sedation are usually sufficient to control the condition. Patients must realize, however, that episodes are likely to recur during situations of nervous fatigue and tension.

An attempt should be made to elicit the originating factors and previous treatment. Careful anoscopic visualization of the anal canal, a sigmoidoscopic examination of the lower bowel, routine blood counts, and urinalysis should be done. If intestinal parasites or worms are likely, stool examinations should be made. Further laboratory and clinical investigations may be indicated. At our clinic, dermatologists routinely see these patients. The allergist too may be consulted.

For constitutional treatment other than for the correction of obvious constitutional disease, the most important requirements are rest, relaxation, and relief from pain. A small amount of a combination of tincture of belladonna and phenobarbital is helpful, especially when some bowel dysfunction has been associated. An antihistamine tablet or capsule at bedtime may allay itching during the night. A low-residue, bland diet will be helpful in cases with bowel dysfunction, and the intake of carbohydrate, excess roughage, irritating foods, and alcohol should be reduced.

The presence of certain other dermatologic conditions such as psoriasis, seborrhea, eczema, and contact dermatitis must not be overlooked.

In general, too much attention is given to the local area and not enough to the constitutional treatment of the patient.

Though temporary results of radiation therapy or alcohol injections are often good, the permanent effects are poor. Radiation therapy should be used only for patients with excessive sweating which cannot be controlled by other means. Radiation improperly given, excessive injections of alcohol, and many of the surgical procedures result in a permanently scarred, contracted anal ring which produces further abnormalities that may cause recurrences of anal pruritus.

Soothing, bland lotions and washes are more satisfactory for permanent results than are the local anesthetic agents. Continued application of certain of the antihistaminic ointments can result in sensitization. Greases and ointments should be avoided.

Strict adherence must be given to local hygiene. We instruct our patients to wash themselves routinely after bowel movements and as often per day as necessary with cotton moistened in warm water and to eliminate toilet tissue and soap. Excessive moisture in this area is to be avoided.

Among the local medications, weak dilutions of potassium permanganate are particularly efficacious, especially in the wet, edematous type

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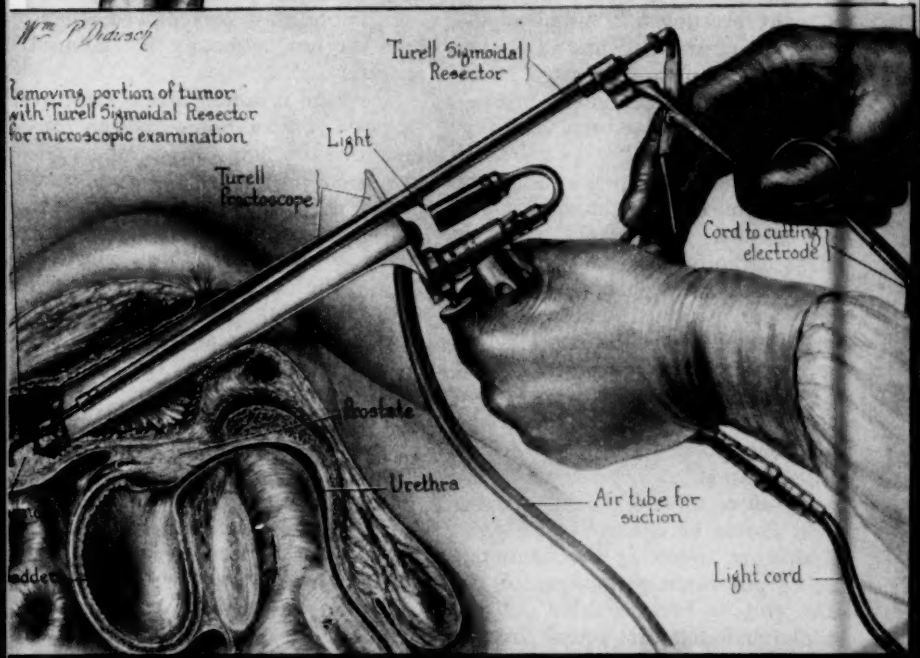

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of perianal dermatitis. A solution of 65 mg. to a liter of hot water used as a soak or with wet compresses several times a day is very satisfactory. Calamine lotion or ointment, particularly with a 1% solution of phenol added, may be all that is necessary for relief.

In more severe cases, hospitalization and sedation and other measures for the relief of pain and tension are necessary. A slow intravenous infusion of a 0.2% procaine solution may effectively interrupt the itch reflex by exerting a continuous anesthetic, antipruritic, and antispasmodic effect on the congested rectal area. To maintain this effect, pronestyl, a procaine amide, may be given orally.

Burow's solution in a strength of 1:30, containing 1% alum and 3% lead acetate, is helpful. A Castellani carbolfuchsin paint, containing carbolfuchsin, phenol, boric acid, and water, with or without resorcinol, helps many. In the initial stages the paint is diluted in a strength of 1:2 or 1:3. Extremes of heat and cold give prompt relief in some acute situations.

Lubrication may be supplied by castor oil or olive oil, but this treatment should be employed sparingly. Frequently following the continued use of potassium permanganate, the skin tends to become dried out and mildly irritated. If actual fissures develop, ammoniated mercury ointment or 2% silver nitrate solution applied to the local area may be helpful. Coal-tar preparations are sometimes used.

As with other chronic skin conditions, preparations may soon lose their efficacy, even though successful for a time. Not only must ingredients in certain dermatologic medications be changed at intervals, but the strength of some solutions will vary according to the local effect.

Indications for surgery are limited to the removal of local disease, such as infected crypts and enlarged, irritating papillae. A contracted anal canal must be corrected. Large edematous skin tabs, fissures, fistulas, and any other possible local irritating factors must be removed. Hemorrhoidectomy should be advised sparingly.

The local injection of the anesthetic-in-oil preparations, oxygen, saline solution, and various undercutting procedures have one important factor in common. They produce local anesthesia by severing the nerves to the area and thus effectively stop the itching and, temporarily, the itch-scratch reflex. However, the resultant scarring and other effects frequently seen after these procedures are not desirable.

The type of perianal and vulvar itching seen in women following the menopause or, more particularly, in women in their 30's and 40's who have been castrated surgically at an early age is difficult to manage. Examination will reveal no obvious cause for the itching. Local application of estrogenic substances such as stilbestrol in 5-mg. capsules intravaginally has been helpful in many of these cases.

Tattooing and undercutting operations that require highly specialized technics should not be utilized by the inexperienced.

Prepared for Modern Medicine

Rectal Radiation Reactions

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IRRADIATION of the rectum is unavoidable when large doses of roentgen rays or radium are administered to the pelvis.

The incidence of rectal reactions is therefore high, especially in women, who are subjected to pelvic irradiation more frequently than men. Rectal reactions vary greatly in intensity, severity, and time of appearance after irradiation, but may be classified as:

1] Rectal radiation epithelitis
2] Rectal radiation cellulitis
  a] Rectal stenosis
  b] Radiation ulcer
  c] Rectovaginal fistula

Rectal radiation epithelitis is a typical mucous membrane reaction to radiation similar to the mucous membrane reactions seen elsewhere in the body, as in the oral cavity or larynx. The reaction usually appears about one week after radium treatment or in the third or fourth week of a course of roentgen-ray therapy. It persists for one to three weeks, sometimes longer, then subsides gradually.

Proctoscopically, at the height of the reaction, the mucous membrane is diffusely hyperemic with some edema, a few small hemorrhages, increased secretion of mucus, and occasionally a grayish fibrinous exudate which covers a finely granular surface.

Symptoms of epithelitis are those of proctitis and consist of tenesmus, pain in the rectum especially during a bowel movement, and frequent stools which may be loose and mixed with blood, mucus, and pus. The immediate prognosis is usually good but healing may be followed several months later by atrophy of the mucous membrane, with pallor and telangiectasia.

Rectal radiation cellulitis is a chronic radiation reaction of all the pelvic tissues, particularly in the connective tissues. It is a late reaction which does not become manifest until six months to two years or longer after the completion of radiation therapy. It is characterized by an indurated thickening of the pelvic connective tissues that is almost indistinguishable clinically from recurrent cancer. It can also occur together with recurrent cancer.

The predominant histologic findings are hyalinization of the connective tissue fibers, endarteritis of the blood vessels, and edema, while the mucous membrane is thin, atrophic, and telangiectatic. This reaction usually lasts many months, sometimes years. Healing is very slow and is often complicated by rectal stenosis, radiation ulcer, or rectovaginal fistula.

At its maximum extent, radiation cellulitis may involve the perirectal tissues, rectovaginal septum, para-

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1. Hyman, H. T.: An Integrated Practice of Medicine, Vol. *IV*, W.B. Saunders, Philadelphia, Pa., 1947, p. 3836.
2. Goodman, L. and Gilman, A.: The Pharmacological Basis of Therapeutics, The Macmillan Company, New York City, 1941, p. 176.

metria, and sacrouterine ligaments, all of which are greatly thickened, indurated, and fixed in the pelvis by the reaction.

Consequently, the rectal lumen may be narrowed almost to the point of obstruction and the *rectal stenosis* thus produced may extend into the rectosigmoid colon. A colostomy may be required.

In its more limited extent, radiation cellulitis may be localized to the rectovaginal septum, affecting the anterior rectal wall. In this location, slight trauma to the vulnerable atrophic rectal mucosa causes an ulceration which is chronic and is rapidly covered by a slough which may persist for many weeks or even for months.

Healing of this *radiation ulcer* is slow and may be complicated by hemorrhage, as the slough separates, and by narrowing of the rectal lumen from edema and indurated scarring.

Occasionally, the devitalization of the tissues that comprise the rectovaginal septum may become so severe, especially with the added effect of infection and trauma, that a complete breakdown occurs and a *rectovaginal fistula* is formed. At the time of fistula formation, other manifestations of radiation cellulitis are usually present.

The opening of such a rectovaginal fistula may vary from a pinpoint to several centimeters in size. The edges of the opening are necrotic at first but, as healing progresses, may become epithelialized. Surgical repair of the fistula is seldom successful because of the extensive devitalization of the pelvic tissues. On rare occasions, spontaneous closure has been observed.

The symptoms of rectal radiation cellulitis are similar to those of epithelitis, but are much more severe and prolonged. Tenesmus and pain may be continuous. A normal bowel movement may be impossible. In addition, are the risks of hemorrhage, obstruction, and incontinence. Treatment is nonspecific and consists of a bland, roughage-free diet, analgesic and antispasmodic medication, antibiotic therapy, and general supportive measures for the severe depreciation of health which occurs. In very severe cases, colostomy offers considerable relief of symptoms.

Severe rectal reactions may be prevented if the radiation tolerance of the pelvic connective tissues is not exceeded. This tolerance is increased if the over-all time of administration of the radiation therapy is lengthened. It is decreased if there has been previous pelvic infection, surgery, or radiation therapy.

All applications of radium require certain safeguards to prevent accidents of displacement and special roentgenographic studies to determine the relative positions of the radium sources. The object of a well-planned course of radiation is to deliver the cancericidal dose within the limits of tolerance of the normal tissues so that such complications as the rectal reactions may be prevented.

Prepared for Modern Medicine

Pediatric Aspects of Proctology

ELLIOTT S. HURWITT, M.D.
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PROCTOLOGIC problems may occur at any age within the pediatric period. The treatment for most of these conditions is similar to that for the same disorders among adults. Inflammatory lesions are found occasionally, neoplasms infrequently, and degenerative diseases are rare.

However, developmental defects are almost peculiar to, and certainly dominate proctology in children. Primary attention will be focused on these problems in this paper.

Imperforate anus—The classification of the variants of this anomaly suggested by Ladd and Gross has earned wide acceptance.

Type I, readily discovered by visual and digital examination, consists of a stenosis at the anorectal junction. Repeated dilatations afford adequate therapy.

The thin membrane covering the anal outlet in Type II yields to cruciate incisions followed by dilatations. A bulge at the perineum when the infant cries usually indicates this remediable situation.

By far the greatest number of cases fall into Type III, characterized by an atresia of the anus and of the rectum for a variable distance above the perineum. It is in this group that associated fistulas to the bladder, urethra, vagina, or perineum occur most frequently.

In Type IV an atretic segment of rectum is interposed between normal sigmoid proximally and a patent anus distally. The technic of Wangensteen and Rice, making a roentgenogram of the baby in the inverted position with a metallic marker on the perineum, is often an aid in estimating the gap between the perineum and patent bowel. When this gap is short, Types III and IV may be repaired in one stage from below.

The recent publications of Rhoads et al. and of Norris and co-workers emphasize the utilization of a one-stage combined abdominoperineal reconstruction as the procedure of choice for most of the cases in Types III and IV. However, when the condition of the infant is precarious or abdominal distention is great, the staged procedures with a preliminary transverse colostomy are preferable, as emphasized by Arnheim.

A ringlike constriction just within the internal sphincter was reported in 39 of 100 consecutive infants examined in a well-baby clinic by Brown and Schoen. This very common anomaly usually disappeared spontaneously by the age of 6 months, although in some instances repeated dilatations were necessary to overcome constipation, straining, and distention. Further surveys of "normal" infants are necessary to establish the incidence.

Prolapse—Varying degrees of protrusion of the anus and rectum may

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occur in infants and children. These are usually slight, and in almost every case respond to prompt digital reduction, elimination of straining by diet and oil, strapping the buttocks, prolonged periods in the prone or knee-chest position, patience, and training. Emaciation and diarrhea require vigorous symptomatic treatment.

Megacolon—The reemphasis by Neuhauser on the role of spasm, distal to the dilated bowel, in a narrowed segment characterized by a deficiency of the intrinsic nerve plexuses, and the popularization by Swenson et al. and Hiatt of combined abdominoperineal pull-through types of operations to eliminate the obstructing area have stimulated interest in Hirschsprung's disease. Other surgeons have achieved comparable results solely through the abdominal route by employing a technic similar to a very low anterior resection or by an obstructive resection of dilated bowel (Ritter and co-workers, Dixon and Judd).

Obviously, these cases must be individualized. Surgery should properly be reserved for the patients failing to respond to a thorough medical trial. In many instances, relief will be obtained by diet, laxatives, and sympatholytic or parasympathomimetic agents. Surgical sympathectomy has been disappointing. Repeated tap-water enemas to overcome massive distention associated with fecal impaction have occasionally resulted in a fatality owing to water intoxication. This catastrophe may be avoided by physiologic solutions.

Congenital microcolon (Cafritz and Greenberg) and duplication of the colon (Allard et al.) have been described, as well as other rare congenital anomalies. Early diagnosis and prompt surgical exploration offer the only hope for salvage.

Polyps—The appearance of blood in the stool is the most common symptom of a polyp. Systemic lesions, blood dyscrasias, and surgical lesions higher in the gastrointestinal tract, such as peptic ulcer, Meckel's diverticulum, or intussusception, must be excluded when rectal bleeding is a presenting complaint. Digital anorectal examination must be supplemented by endoscopy, followed by a barium enema study, preferably of the air-contrast type.

Isolated polyps within the reach of the sigmoidoscope may properly be removed from below. Abdominal colotomy and polypectomy is indicated for all higher lesions, and in every case the entire colon must be palpated for unsuspected lesions.

Malignant changes in solitary polyps in children have been reported but are uncommon.

However, the very real danger of carcinoma associated with congenital familial polyposis of the colon demands a most aggressive approach.

Total colectomy and a permanent ileostomy, possibly of the perineal type with sphincter preservation (Ravitch), has been advocated by some. However, the bulk of surgical opinion still reserves ileostomy as a last resort, supporting a program of ileoproctostomy, subtotal colectomy from the terminal ileum to the rectosigmoid, fulguration of the rectal polyps, and periodic sigmoidoscopic observation, fulguration, and biopsy of subsequent polyps.

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1. Bradley, J. E., et al.: J. Pediat. 38:41, 1951; idem: Amer. Acad. Pediat., meeting Oct. 16, 1951.

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Geriatric Aspects of Proctology

WILLIAM BERNSTEIN, M.D.
University of Minnesota, Minneapolis

THE attitude of most physicians toward aging patients has recently undergone a marked change. Because of the influence of physicians interested in geriatrics and the publications devoted to geriatric subjects, the lot of the elderly patient is a happier one.

Most physicians have adopted the philosophy that the remaining days or years of an elderly individual should be made as comfortable and pleasant as possible. Age is no longer considered a factor in attempting to make an accurate diagnosis, nor do surgeons recognize age as a deterring factor in ridding the body of diseased organs or tissues.

Time was when very little attention was paid to changes in bowel habits of elderly patients or to the passage of small amounts of blood with the stools. Since these are now known to be the early symptoms of bowel tumors, a concerted effort is being made to learn of their presence and make the correct diagnosis.

More and more residents of homes for the aged and of infirmaries are receiving the benefit of rectal and large bowel examinations. An effort is being made to diagnose such conditions as benign polyps, cancer, and diverticulitis and its complications early, when surgery can offer a good possibility of cure. Anorectal lesions such as hemorrhoids, fissure and fistula, and anal pruritus are treated to permit satisfactory and comfortable elimination. The therapy is usually as complete and thorough as that given to younger patients.

Sigmoidoscopic examinations using the 25-cm. scope are rapidly becoming routine procedures in many clinics and private practices. Since approximately 15% of all malignant disease occurs in the rectum and colon and approximately 75% of these tumors are in reach of the sigmoidoscope, it is only logical to include this examination in all complete surveys. Using the knowledge and instruments now at our disposal we can solve a great portion of the problems arising in the large bowel.

Preoperative surveys combined with proper preoperative treatment render a very high percentage of elderly patients adequate surgical risks. Intelligent postoperative care, likewise, raises the survival rate of major surgery for these patients.

Proctologic problems are common among elderly persons. The possibility of disease in the colon and rectum should be kept in mind whenever these patients are examined. Carefully taken histories, proctoscopic examinations, and roentgen-ray studies of the large bowel will uncover pathologic processes which otherwise would be missed. Proper therapy will make possible years of health for aged individuals.

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Emergencies in Proctology

ARTHUR A. GLADSTONE, M.D.
Burlington, Vt.

ROBERT TURELL, M.D.
New York City

PROCTOLOGIC emergencies, with the exception of those caused by swallowed foreign bodies, usually originate in and involve the anorectum or colon. Anorectal disorders usually produce local effects amenable to simple therapy, while colonic disorders produce intraabdominal and systemic effects requiring major surgical treatment.

The *anorectal lesion* usually causes pain, bleeding, or swelling, or combinations of these. The most common lesions are perianal hematomas, abscess, irreducible prolapse, and foreign bodies.

Perianal hematomas (thrombosed external hemorrhoids) may be quite massive and extend to or involve the internal piles, causing prolapse with congestion and strangulation of the blood supply, eventuating in necrosis and gangrene. We prefer immediate surgical therapy to conservative treatment with delayed surgery because the painful lesion is eliminated and the patient is quickly restored to economic usefulness.

Induration in the perianal, perirectal, and pilonidal areas may be treated with terramycin for twelve to twenty-four hours; in favorable cases the response is prompt and permanent. An abscess, however, should be treated forthwith by unroofing the abscess cavity. We are opposed to meddlesome probing for fistulous tracts. When the concomitant fistulous anorectal tract is readily discernible and located no deeper than under the subcutaneous component of the external anal sphincter muscle, the fistulous tract may be excised at the original operation.

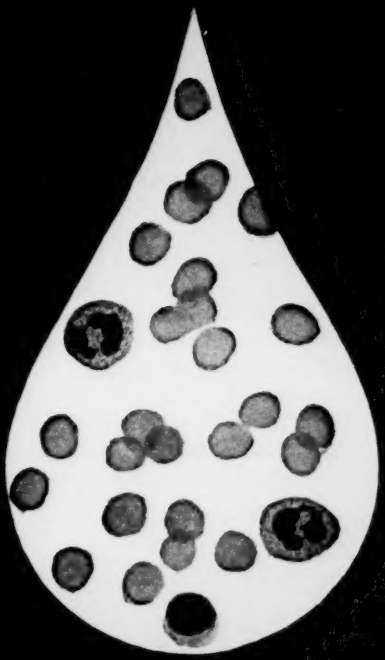
Prolapse and procidentia, particularly in children and the aged, should be reduced promptly when the protruding mass is congested, painful, and tender.

Bleeding after anorectal operative procedures which persists in spite of packing is best controlled in the operating room under general anesthesia.

The *colorectal lesions* requiring prompt attention are those causing intestinal perforation, suppuration, or obstruction. The obstructive lesions may be either paralytic or mechanical in origin; only the mechanical require prompt surgical intervention.

Imperforate anus in the newborn requires surgical intervention. Perineal anorectoplasty is indicated in the absence of undue intestinal distention and vomiting. With advanced intestinal obstruction, the perineal operation should be preceded by construction of a proximal vent in the transverse colon.

Spontaneous introduction of at-



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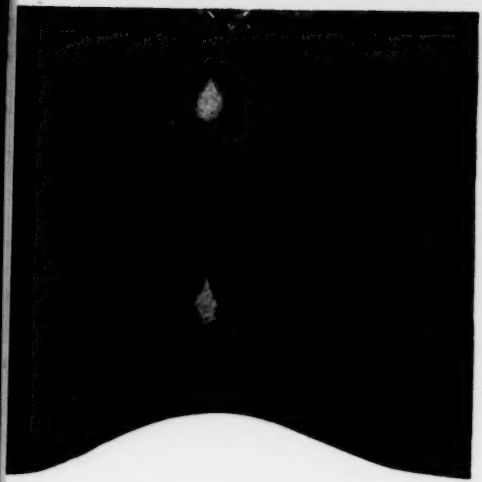
mospheric air into the colon via the endoscope or hydrostatic pressure with the aid of a diagnostic enema, inserted under fluoroscopic control, may produce complete reduction of intussusception, particularly of the colocolonic or colorectal type. These methods of therapy should precede surgery unless evidence of circulatory strangulation is seen.

Congenital rectal stricture in juvenile patients occasionally produces complete intestinal obstruction requiring a proximal vent for immediate relief. Subsequently, the stricture may be resected with the aid of the double-loop, high-frequency resector followed by reestablishment of intestinal continuity. These procedures also apply to adults with intestinal obstruction caused by diaphragmatic strictures produced by inflammatory processes, and in selected cases of stricture of the rectum or rectosigmoid caused by recurrent cancer following so-called anterior resections.

Obstruction caused by a primary neoplasm in the left segment of the colon calls for the construction of right-sided transverse colostomy or cecostomy of an exteriorizing type, although the tube type of cecostomy also has merit. Cecostomy is indicated for an obstructing carcinoma in the transverse colon.

Acute diverticulitis may present the symptoms and signs of left-sided appendicitis but, unlike appendicitis, is best treated conservatively. Recur-



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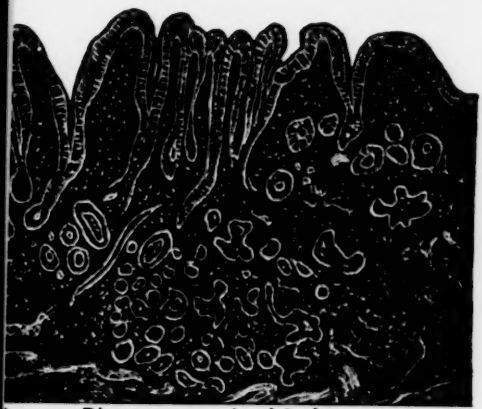

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rent bouts are treated by a right-sided transverse colostomy followed by resection of the involved segment of the sigmoid with simultaneous open anastomosis at a later date. Diverticular abscess with localized or generalized peritonitis sometimes requires immediate transabdominal drainage combined with a proximal colostomy. A ruptured diverticulum should be promptly drained or exteriorized, if feasible.

Chronic ulcerative colitis, except for perforation, seldom needs emergency treatment. Impending perforation requires immediate ileostomy. Actual perforation necessitates transabdominal drainage, which may be combined with an ileostomy. Hemorrhage should be treated by blood transfusions.

Volvulus of even more than 180 degrees causing partial intestinal obstruction may be decompressed by a rectal tube introduced through a sigmoidoscope. However, complete intestinal obstruction of the closed-loop type, with or without irreversible circulatory changes, calls for transabdominal detorsion and resection of the involved segment. Recurrent volvulus is best treated by resection and primary anastomosis.

Injuries to the colon and rectum by gunshots, impalement, fractured pelvic bones, or objects passed via the anal canal may require immediate operation. The gunshot wounds of the colon encountered in civilian practice, unlike similar military wounds, if not extensive and not involving the mesentery and mesenteric vessels, may be treated by a two-layer closure after debridement with or without construction of a proximal vent. Exteriorization resection is usually reserved for extensive lacerations or mesenteric involvement.

Tear of the colon caused by an enema usually demands prompt laparotomy, whereas tear caused at proctoscopy, particularly if seen after four or more hours, may be treated expectantly. In both instances the tear usually occurs on the antimesenteric aspect of the colon above the peritoneal reflection and is easily sutured.

Swallowed foreign bodies may become arrested at the pyloric ring, ileocecal valve, or colonic flexures, in the rectum just above or at the pectinate line, or very often in the anal crypts causing perianorectal suppuration.

Foreign bodies that become arrested in the bowel should be removed promptly through an incision; resection is unnecessary. The foreign body lodged in an anal crypt should be removed early, preferably with the injured crypt; the wound is left open to facilitate drainage.

Foreign bodies introduced through the anal canal should be given a chance to pass spontaneously unless large and fragile.

Fecal impaction requires immediate removal.

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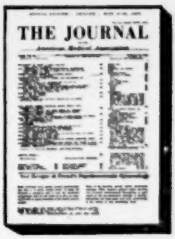

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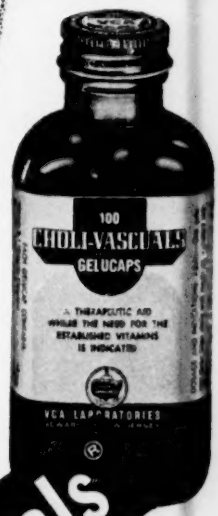

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Vitamin B_6	3 mg.
Ascorbic Acid	30 mg.
Choline-Methionine Tartrate	200 mg.
Inositol	150 mg.
Vitamin B_{12}	5 mcg.
Alpha Tocopherol	50 mg.

Samples and literature on request.

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Add an Orange a Day to Your Diet, Doctor..

for These Newly Realized Physiologic and Nutritional Benefits

To peel an orange quickly: cut off top, score skin in sixths, and strip off as shown, leaving the valuable white material (albedo) that clings naturally.

Recently rekindled interest again has focused attention on the protopectins, the native form of pectin as it occurs in certain fruits. California oranges supply generous amounts of these complex carbohydrates. In the edible portion of the orange they occur in the fibrovascular bundles, the intersegmental walls, and the juice sacs. Only comparatively small amounts are contained in the juice.

When the fruit is eaten whole, the ingested protopectins are converted to pectin within the small bowel. Subjected here to progressive enzymatic action, and to bacterial action chiefly in the colon, pectin is gradually broken down into substances which to a large extent are responsible for its advantageous behaviour in the intestinal tract.

Eating whole oranges daily can have far-reaching effects on nutritional health and general well-being, accomplished through the promotion of improved intestinal function, a better intestinal environment, and enhanced absorption of ingested nutrients.

The beneficial effects of the protopectins begin with the release of pectin into the intestinal contents. Here is what you may look for from the daily ingestion of protopectins as supplied by California oranges, properly peeled, eaten whole:

A Valuable Two-Way Regulatory Influence

The protopectins help avoid many digestive ills and upsets. They provide a valuable soothing and demulcent influence to counteract the effects of intestinal irritants; thus they aid in the prevention of diarrhea. Their high water-binding power leads to the formation of desirable gelatinous bulk which gently cleanses the intestinal wall and stimulates peristalsis, thereby tending to prevent constipation.

Improved Absorption of Nutrients

By lowering intestinal pH and lessening intestinal fermentation and putrefaction, the protopectins create an environment conducive to more complete absorption of important nutrients supplied by the daily diet. Thus all the foods eaten yield a fuller measure of their contained nutrients, without leading to weight gain, since their caloric contribution remains the same. The influence of the protopectins, of value at every age, is especially beneficial in the later years of life.

Improved Intestinal Flora

Through the release of lower fatty acids and galacturonic acid the protopectins encourage growth of normal intestinal inhabitants. The consequent reduction of intestinal pH, harmless to the normal flora, inhibits growth of many putrefactive and otherwise undesirable microorganisms in the intestine. In addition, galacturonic acid is credited with a detoxifying influence within the bowel.

These beneficial effects are over and above the multiple vitamin values of oranges. Oranges remain the best practical source of vitamin C. Hence, to assure adequate intake of vitamin C, by all means continue drinking your daily quota of orange juice. ***But for the important benefits the protopectins can bring you, eat at least one whole orange every day.***

Sunkist Oranges are the finest of the crop of California, where sunshine, mineral-rich soil, and cool nights combine to produce oranges of the highest quality.

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Sunkist
California® Oranges

Prepared for Modern Medicine

Office Proctology

HOYT R. ALLEN, M.D.
University of Arkansas, Little Rock

IN the practice of proctology, it sometimes becomes expedient or necessary to perform minor surgical procedures in the office. As a general rule, I do not recommend the performance of rectal operations on ambulatory patients, but some of the pathologic processes, because of their acuteness or superficial nature, lend themselves readily to treatment without hospitalization.

Probably the most common condition seen by proctologists which benefits from immediate surgery is the external thrombotic hemorrhoid. As a rule, if one sees the patient within twenty-four to seventy-two hours after the onset, it is wise to extract the clot. If the patient is not seen until after this period of time, conservative therapy will usually suffice, though some will have considerable pain for five to seven days and will obtain relief from thrombectomy.

Local infiltration using a 2% procaine hydrochloride solution is employed for anesthesia and the clot is removed by excision of an elliptic segment of skin with the underlying thrombus. Bleeding is ordinarily slight, though coagulation of a persistent bleeder is occasionally necessary.

A small strip of a hemostatic agent moistened with an agent that gives prolonged topical anesthesia is placed over the open wound with one end loosely inserted into the anal canal, and a dressing is applied. This serves as both a hemostatic and analgesic measure. The patient is instructed to take a hot sitz bath in about four to six hours; the gauze wick is passed spontaneously with the first bowel movement.

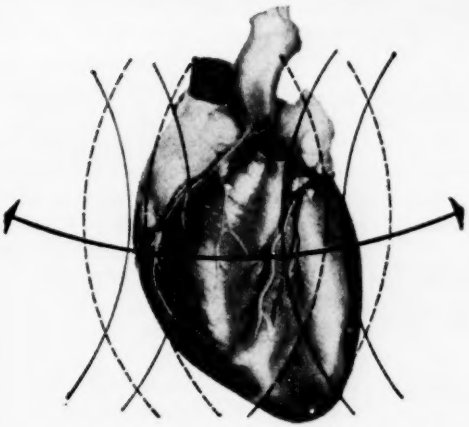
Anal fissures are found in about 70% of patients operated upon for rectal disorders. In a small percentage of patients, an acute superficial fissure may be present without an associated chronic inflammatory change, and surgical treatment in the office may be sufficient for a cure. Especially is this true if the patient has considerable sphincter spasm with attending pain.

The base of the ulcer is infiltrated with 2% procaine solution and the fissure is incised down to and including the subcutaneous fibers of the external anal sphincter. Bleeders are sutured with plain 0 catgut if necessary and a dressing is applied, using a hemostatic substance. Follow-up examination is important to be sure that the wound heals smoothly from the base.

Small ischiorectal and postanal abscesses may be opened, using local anesthesia. This will allow the subsequent fistula to develop. The patient should be told of this likelihood and that a fistulectomy will be necessary at a later date.

A very superficial uncomplicated

In cardiac decompensation



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fistulous tract is occasionally suitable for office treatment. A solution of 3% Metycaine is injected into the tract and the latter is incised from the external to the internal opening. Pressure is generally sufficient to control bleeding and a dressing similar to that used for hemorrhoids and fissures is applied. Postoperative care must be diligent so that the wound heals from the base up.

On occasion, one sees small hypertrophied anal papillae and shallow crypts which are not associated with any other pathologic conditions. These are frequently the precursors of more serious trouble and should therefore be removed. Using local anesthesia, the papillae are removed through an operating anoscope and the crypts are merely opened up by a crypt hook with a sharpened concave border.

Much has been written about the injection treatment of hemorrhoids. Uncomplicated internal hemorrhoids without ulceration, thrombosis, or infection may be treated in this manner in selected cases. I employ a solution of 5% phenol in cottonseed or other suitable vegetable oil, and inject enough solution to just perceptibly blanch the mucosa. Usually the three major groups are injected at one sitting and the procedure is repeated at seven- to ten-day intervals until the fibrosis has become satisfactory.

Lastly, is the occasional case of pruritus ani which may benefit from a subcutaneous injection of a long-lasting anesthetic. In these instances, I use a solution of oil-soluble anesthetic, depositing 5 cc. on either side of the anus, just beneath the skin, but not into the sphincter muscle.

DIARRHEA OR DYSENTERY

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In diarrheas, Arobon assures rapid control of the abdominal distress, the frequent stools, and the resulting generalized discomfort.

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Arobon produces excellent results in the nonspecific diarrheas of adults, children, and infants, often leading to formed stools in 12 to 15 hours. In the specific dysenteries, its action is valuable in conjunction with indicated chemotherapeutic agents.

SIMPLE TO PREPARE AND HIGHLY PALATABLE

For adults and children, Arobon is simply prepared by stirring the powder into milk. Average dose for adults, two level tablespoonfuls in four ounces; for children, one level tablespoonful in four ounces.

For infants, two level teaspoonfuls in four ounces of skim milk or water and boiled for ½ minute.

When mixed with milk, Arobon forms a pleasant chocolate-like drink.

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COLORADO SPRINGS, COLORADO

Prepared for Modern Medicine

Constipation

ELIHU KATZ, M.D.
New York Polyclinic Medical School and Hospital, New York City

AMONG the important causes of constipation are failure to eat enough food roughage, lack of sufficient amounts of fluids, and improper eating habits. Psychogenic and neurogenic disorders and similar conditions associated with functional disturbances of the autonomic nervous system may produce atonicity or hypertonicity of the colon, both of which interfere with normal bowel movements.

Voluntary neglect of immediate response to the urge to defecate, and failure to take sufficient time to do so, cause constipation. Habitual failure to answer the normal urge eventually dulls the mechanism by which evacuation takes place, leads to a need for regular use of cathartics, and eventually to the establishment of habitual constipation.

Fatigue or lack of exercise may be responsible for constipation. A certain amount of exercise is necessary to maintain tonus of intestinal muscles.

Endocrine upsets may disturb regularity of bowel movement. The relationship between endocrine glands and autonomic nervous system, upon which tonus of the gastrointestinal tract depends, is well known. Thyroid deficiency in many instances leads to insufficient bowel stimulation and constipation. In such cases, administration of thyroid may secure normal bowel movements.

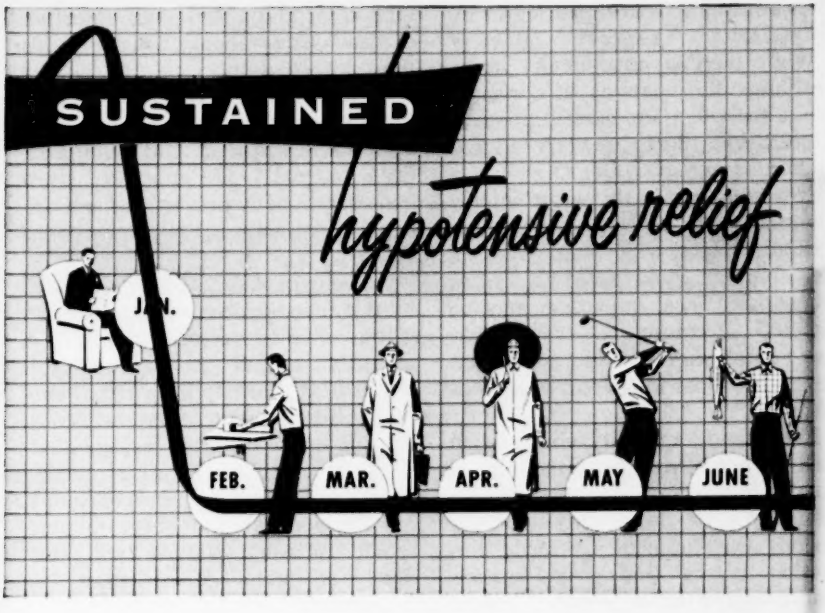
Constipation associated with infectious diseases, chronic debilitating disorders, chronic systemic diseases, and malnutrition may be explained on the basis of either toxemia or loss of muscle tonus, or both.

Gastric ulcer and cancer are frequently accompanied by constipation. Gallbladder disease, with or without gallstones, has constipation as a presenting symptom. The constipation is explained by reflex action and colon spasticity.

Anorectal diseases such as fissures, hemorrhoids, and spastic disturbance of the rectal sphincter produce constipation by interference with expulsion of the feces. They require local surgery which yields excellent results.

Malignant or benign strictures, strangulated hernia, volvulus, intussusception, tumors, foreign bodies, organic diseases of the colon, and external pressure as from malposition of the uterus cause mechanical constipation.

Too frequent use of cathartics leads to constipation. Since most cathartics eventually lose their effectiveness when habitually taken, patients find it necessary to use the drugs more frequently and in larger doses, to seek stronger cathartics, or to change repeatedly from one cathartic to another. Finally, artificial measures such as suppositories, enemas, high colonic irrigations, and



through i-n-t-e-r-r-u-p-t-e-d RUTOL therapy

Goodman and Gilman* stress the importance of assuring continuous response to nitrite medication by: (1) "Employing the smallest effective dose to initiate therapy, so that . . . " (2) "the dosage may be increased as tolerance develops" and (3) "cessation of administration of nitrites for several days" to reestablish "the original degree of susceptibility . . . "

RUTOL

Suggested Rx Cyclic Regimen

1 One Rutol Tablet after each meal and at night, for 2 weeks.

2 Two Rutol Tablets q.i.d., for 1 week.

3 Use alternate medication for two weeks, returning to Rutol as before.

(Pitman-Moore Brand of Rutin, Phenobarbital and Mannitol Hexanitrate)

—combines mannitol hexanitrate in suggested small dosage, 16 mg. (¼ gr.); phenobarbital, 8 mg. (⅛ gr.)—sufficient to be effective without danger of over-sedation; rutin, 10 mg. (⅙ gr. approx.) to help safeguard against capillary fragility.

PITMAN-MOORE COMPANY
Pharmaceutical and Biological Chemists
Division of Allied Laboratories, Inc.
Indianapolis 6, Indiana

*Goodman, L., and Gilman, A.: *The Pharmacological Basis of Therapeutics*, New York, The Macmillan Co., 1941.

other contraptions are resorted to by the patient.

While there is no difficulty in establishing the diagnosis of constipation, a thorough and careful physical examination must be made to exclude an organic cause. Digital rectal examination is the most important diagnostic procedure. Palpation with the finger will reveal feces in the ampulla even after a recent evacuation. Fecal impaction may be detected. Proctoscopic examination may reveal anorectal disease or evidence of some form of local obstruction.

Roentgenographically, constipation exists when there is retention of usual opaque oral motor meal in the colon after the seventy-two-hour period. Development of rectal impaction before this period means that constipation is present. Examination of the colon after injection of the opaque enema usually yields most information.

Treatment of constipation may not prove simple. Psychotherapy is important. Exercise and avoidance of a sedentary life must be given consideration. A proper diet and adequate amounts of fluids are of value.

An important temporary measure in the management of constipation is the olive-oil retention enema. A retention enema at bedtime, followed next morning by a saline enema one-half hour after breakfast, usually brings desired results.

Many artificial bulk-producing products are on the market today, but foods of natural bulk are preferable. In using artificial bulk products, adequate fluids must be consumed.

Doctor to Doctor

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The May 15 winner is

B. H. Payne, M.D.
Staunton, Va.

Mail your caption to
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new!

for daytime tranquility

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To calm the tense and nervous patient

CAR-SED-INE fills a long-felt need for a non-hypnotic, non-narcotic sedative that can be safely prescribed for daytime sedation without dulling the senses or producing unwanted drowsiness.

CAR-SED-INE combines two drugs of established clinical efficacy and safety:

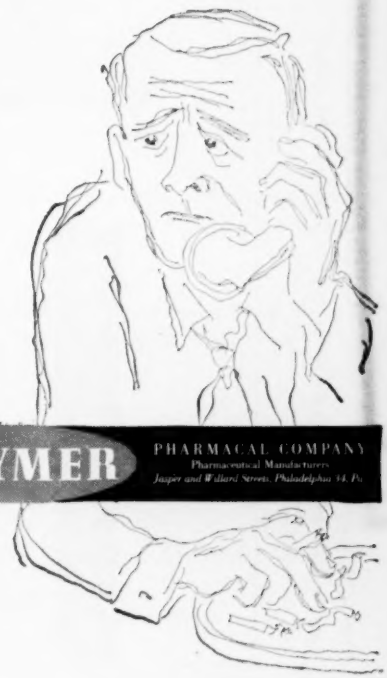
Carbromal "...a dependable sedative. It allays excitement and anxiety and tends to restore quietude and tranquility."[1]

Scopolamine ". . . certainly . . . is effective in relieving the patient's emotional disturbances."[2]

FORMULA: each tablet contains Carbromal, 250 mg., and Scopolamine, HBr 0.1 mg.

DOSAGE: one tablet (in rare cases, two) two to four times daily, as required.

Supplied, on prescription only, in bottles of 100 and 1,000 tablets.



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Jasper and Willard Streets, Philadelphia 34, Pa.

1. Krantz, J.C. & Carr, C.J.: Pharmacological Principles of Medical Practice, Williams & Wilkins Co., Baltimore, Md., 1951.

2. Goodman, L. & Gilman, A.: The Pharmacological Basis of Therapeutics. The Macmillan Co., New York City, 1941.

Serving the medical profession for nearly a third of a century.

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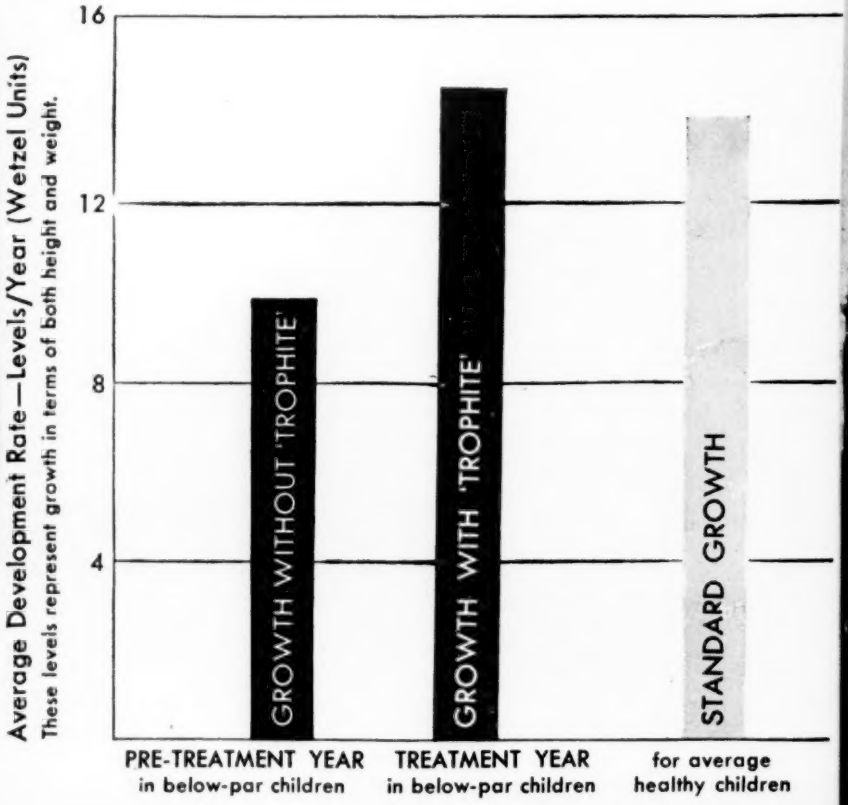
TROPHITE*

a delicious, high-potency elixir of B_{12} and B_1 to increas

See how 'Trophite' increases growth

In a controlled clinical trial—over a one-year period—'Trophite' produced almost a 50% increase in rate of growth in children who had been below par. (For details, see professional literature.)



appetite and growth

'Trophite' increases appetite

When growing children lose appetite because of B_{12} or B_1 deficiency, 'Trophite' increases appetite by insuring adequate intake of both these factors.

'Trophite' is delicious

'Trophite' is not merely palatable; *it is delicious.* During the clinical trials, virtually every one of the hundreds of child patients expressed actual delight in taking 'Trophite'.

Formula

Each 5 cc. teaspoonful of 'Trophite' supplies Vitamin B_{12}, 25 mcg.; and Vitamin B_1, 10 mg. Available in 4 fl. oz. bottles—enough for 24 days' treatment at the recommended dosage.

Dosage

One teaspoonful daily—or as directed by the physician.

Smith, Kline & French Laboratories, Philadelphia

Trademark

Prepared for Modern Medicine

Nursing Care in Proctology and Colonic Surgery

RUTH SALZMANN, R.N., B.S.
New York City

GENTLENESS should be the motto of nurses caring for patients with proctologic conditions, for few patients are more unhappy than those experiencing acute anal pain. Hasty or rough handling during treatment can aggravate the suffering and start undesirable sequelae.

Nonoperative care—For all special examinations such as digital examination, proctoscopy, and barium enema, the rectum must be absolutely clean. The enema is an essential item in preparation, and its effectiveness rests with the nurse.

Because of tenderness in the area and the possibility of producing bleeding, the choice of rectal tube is important. A No. 16 to 18F catheter, well lubricated and inserted not more than 4 in. within the rectum, produces the least trauma. Tap water at 108°F. is the solution of choice unless otherwise ordered. The enema should be given at least two, preferably four hours before the examination, so that no fluid will remain in the rectum.

The patient should always receive an adequate explanation before the contemplated procedure. The nurse then instructs the patient to empty his bladder, helps him assume the optimum position, and drapes him. It is the nurse's function to ascertain the efficiency of the mechanical setup, to assist the physician, and to lend support to the patient.

Preoperative care—Nursing care begins with the patient's admission to the hospital. At this time, the nurse should make every effort to relieve the patient's anxiety and insecurity.

The nurse's function is to carry out the surgeon's orders regarding the correction of nutritional lacks, anemia, dehydration, and electrolyte imbalance.

The enema, effectively given, is again the most important preoperative procedure. Shaving is confined to the perianal region and the inner thighs; this area is also thoroughly cleansed with soap and water.

For a few days before operation the patient with a suspected abscess may receive additional preparation consisting of warm moist compresses to localize the infection and lessen pain.

Preparation of the colon for surgical intervention is accomplished primarily by daily colonic irrigations. Since the nurse may encounter difficulty inserting the tube, and the patient be unable to retain an average amount of fluid, the precautions mentioned in connection with enemas must be observed.

For some patients, intraalimentary drainage is indicated. Whatever the

tube of choice, oral hygiene is an important nursing measure. The nurse must inspect the suction apparatus frequently to insure proper functioning. The tube must be kept in place, free of kinks, and patent.

Postoperative care—After rectal operation, the patient is usually kept in bed for the rest of that day. The dressings, which are best held in place by a T binder, should be observed frequently for signs of bleeding. If drainage occurs, the nurse should change the dressings as frequently as necessary to provide for the patient's comfort. To loosen dressings and packing before removal, it is best to moisten them with hydrogen peroxide and to protect the wound with Vaseline gauze.

The nurse must watch the patient for urinary retention which, because of the relationship of the nerve supply of bladder and anus, frequently occurs. Every measure should be employed to avoid the necessity for catheterization; often it is sufficient to have the patient stand to void or use a commode. The nurse must see to it that the perineum is irrigated with warm water after each bowel movement and after each voiding in the case of female patients.

The food intake is regulated by the length of time the surgeon wishes to prevent defecation.

Beginning about the second day, hot sitz baths may be ordered two or three times daily to promote healing as well as comfort. They are best given in a bathtub half full of water at 110 to 120° F., if tolerated by the patient; 120° F. must never be exceeded, because a burn may result. The bath lasts from five to ten minutes, during which the nurse should stay with the patient—at least for the first few treatments.

Throughout the postoperative period the nurse should watch for symptoms and signs of complications—infection, embolism, and thrombophlebitis—and report these at once.

As a teacher of positive health the nurse should always emphasize the preventive features of rectal disease: exercise, proper diet, and regularity. She has to stress the importance of seeking medical advice in the presence of unusual symptoms, particularly because of the high incidence of malignancy in that region.

The postoperative care of a patient with a colostomy is the same as for any patient who has had major surgery, with the exception of caring for the colostomy. When the colostomy is opened, or when the patient has his initial evacuation, he may first realize the nature of the operation and his mental depression may be most intense. Then the nurse's teaching really starts: She

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IT IS now clearly recognized that a baby's whole future development is profoundly influenced by his early experiences with food.

Happy mealtimes help a baby thrive emotionally as well as physically. You, yourself, have noticed how often a sunny disposition and sturdy vitality are found in the babies who eat with zestful appetite.

And as one of the many doctors who recommend Beech-Nut Foods, you will be glad to learn that there is a wider choice of appealing varieties than ever before—to *keep* mealtimes happy for your young patients.

Babies love them... thrive on them!

A wide variety for you to recommend: Meat and Vegetable Soups, Vegetables, Fruits, Desserts—*Cooked* Cereal Food, *Strained* Oatmeal and *Cooked* Barley.

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FOODS *for* BABIES

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Every Beech-Nut Baby Food has been accepted by the Council on Foods and Nutrition of the American Medical Association and so has every statement in *every* Beech-Nut Baby Food advertisement.

should explain that he will be taught to care for himself in an independent manner, without inconvenience to anyone, and that he will be able to resume most of his normal activities.

The first colostomy irrigation should be done by the nurse with the patient in bed; succeeding ones can be done with the patient sitting on the toilet and assuming more and more responsibility for self-care. The technic is the same, regardless of the method. The frequency and time of irrigation depend on the individual's needs.

The fluid receptacle should never be placed more than 2 ft. above the colostomy, because too much pressure causes discomfort. When the patient experiences a feeling of fullness, the inflow should be clamped off, and the fluid and fecal material will be expelled. Irrigation is continued until the fluid is clear, which may take from forty-five to sixty minutes. Time must be allowed for drainage so no spilling into dressings between irrigations will occur.

The skin must be cleansed with soap and water, and the stoma covered with a gauze square or soft paper held with a binder or belt.

The patient is advised to eat a well-balanced, low-roughage diet; the patient will be the best judge of his specific food tolerance. Good nursing care and adequate instruction can enable the patient to live a near normal life within a few weeks.

"... and don't forget the VITAMINS!"

In contagious diseases, such as measles, fever increases vitamin requirements; accompanying anorexia further interferes with normal nutrition. A balanced vitamin preparation is a dependable way to counter such developments.

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Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Scrubbing the Pleura in Spontaneous Pneumothorax*

Comment invited from
Richard H. Meade, M.D.
Bernard Hyde, M.D.
Ray Hyde, M.D.

► TO THE EDITORS: In reading the article by Drs. J. Murray Beardsley and Vahey M. Pahigian, one learns that mechanical induction of pleural adhesions is only a part of the management of chronic and recurrent spontaneous pneumothorax.

The important points in the management of these conditions are correcting the cause of the leak of air, determining that the lung can fully expand, carrying out decortication if necessary, and providing for drainage until the lung becomes fixed to the parietal pleura in full expansion.

The authors say that rubbing the pleura with gauze is necessary to insure firm adhesion of the lung to the chest wall. In my experience the trauma to the pleura produced in correcting the cause of the air leakage, combined with the trauma from the presence of a drainage tube, has been sufficient to insure firm obliteration of the pleural space. In fact, in certain cases in which it has been thought unwise to attempt removal of all the cysts present and they have been unroofed and their bases sutured, complete reexpansion of the lung has been obtained by adequate drainage, without recurrences.

If the operation is confined to a small segment of the lung and little trauma has resulted, rubbing of the pleura with gauze is indicated.

RICHARD H. MEADE, M.D.
Grand Rapids

► TO THE EDITORS: In our series of 120 consecutive cases of nontuberculous, nontraumatic benign spontaneous pneumothorax, it has been unnecessary to recommend any therapy other than bed rest. Recurrence of the pneumothorax has occurred in 19%, but it should be noted that approximately 20% of the recurrences were on the opposite side. More than 2 recurrences are uncommon.

In view of the excellent results with nonsurgical treatment, the infrequency of recurrence, the variability of effectiveness of mechanical induction in preventing pneumothorax, and the significant reduction in pulmonary function following pleural adhesions, we have not found this procedure necessary.

BERNARD HYDE, M.D.
RAY HYDE, M.D.
Los Angeles

*MODERN MEDICINE, Feb. 15, 1952, p. 103.

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of **cod liver oil**
that makes the great difference in

DESITIN®

hemorrhoidal
SUPPOSITORIES

the hemorrhoidal patient may sit, move and walk in greater comfort as Desitin Hemorrhoidal Suppositories with Cod Liver Oil act promptly to...

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Composition: crude Norwegian cod liver oil, lanolin, zinc oxide, bismuth subgallate, balsam peru, cocoa butter base. No narcotic or anesthetic drugs to mask rectal disease. Boxes of 12 foil-wrapped suppositories.

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DESITIN CHEMICAL COMPANY ●
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Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-215

THE CLUE

ATTENDING M.D: I would like you to see a 12-year-old boy whose chief complaint is excessive fatigue and fever. The present illness began three months ago, when bright red blood appeared in the stool; this recurred at weekly intervals. Barium enema examination was said to be unrevealing. Four weeks ago he returned to school, but became severely fatigued and had one to five loose bowel movements a day, flecked with fresh blood. Five days ago he had a temperature of 101.2°, exacerbation of fatigue, and was admitted to this hospital.

VISITING M.D: Please give me the early history of his illness.

ATTENDING M.D: The boy was in good health until a year ago, when he began to tire readily, bruised easily, and had a fever and sore throat. He was given 2 injections of penicillin and seemed all right until six weeks later, when nocturnal precordial pain and dyspnea suddenly developed.

VISITING M.D: The first ominous sign.

ATTENDING M.D: Correct. He was hospitalized elsewhere for four months, treated with penicillin for six weeks. He lost 10 lb.

VISITING M.D: They must have thought of bacterial endocarditis. What was the laboratory evidence?

ATTENDING M.D: A blood culture yielding streptococci of unspecified type, a systolic heart murmur, a sedimentation rate of 20 mm. per hour. Results of other tests were negative.

VISITING M.D: The evidence is meager, the subsequent course is the clue.

PART II

ATTENDING M.D: If you know what the clue is, I wish you'd tell the Medical Service.

VISITING M.D: First give me the benefits of the information they have —the past history, physical examination on admission.

ATTENDING M.D: The boy was thin,

"It was just the help I needed —when you took me off coffee!"

It isn't always easy for patients to follow your orders—when you advise giving up coffee. But, as you know from experience, you'll get more cooperation from your patients if you suggest *caffein-free* Postum instead. They'll like its hearty flavor—find it easier to *stay off* coffee! So, to help *you* help your patients, we'll be happy to send you, without charge or obligation, our Professional Pack of 12 trial-size packages of Instant Postum. Use the handy order blank below.

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While many people can drink coffee or tea without ill effect—for others, even one or two cups may result in indigestion, hypertension and sleepless nights. *See "Caffein and Peptic Ulcer" by Drs. J. A. Roth, A. C. Ivy, and A. J. Atkinson —A. M. A. Journal, Nov. 25, 1944.*

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not acutely ill. The heart was not enlarged. We noted a soft systolic murmur at the base, loudest at the pulmonic area. The remainder of the examination was normal, except that the upper edge of the liver was percussed at the sixth rib and the lower border was palpable 6 cm. below the midsternal line. No splenic enlargement.

VISITING M.D: Temperature, pulse, blood pressure not abnormal?

ATTENDING M.D: Correct.

VISITING M.D: That brings up the laboratory findings. Here, give me the chart. *(Thumbs through thick record.)* One thing this boy has had is the benefit of a medical scientific laboratory inquiry. Sometimes I wonder how many lab tests are the equivalent of 1 gm. of a doctor's gray matter. With all these tests, a person could play the diagnosis like a bookie. It spoils it for me. I'll just ask for what I want, and you tell me. *(Hands record back.)* Total serum protein?

ATTENDING M.D: That is 8.54 gm.

VISITING M.D: Albumin-globulin ratio? Red and white counts?

ATTENDING M.D: Albumin-globulin ratio, 0.8; the red blood count, 2,900,000; the white blood count is 23,000, with normal differential.

VISITING M.D: Total cholesterol and cholesterol esters?

ATTENDING M.D: Normal; esters 69 mg.

VISITING M.D: Prothrombin time and phosphatase?

ATTENDING M.D: Prothrombin, 62% of normal or 22 seconds; alkaline phosphatase, 15 units.

VISITING M.D: Any other tests significant?

ATTENDING M.D: Urine normal. Numerous other tests were not remarkable. You forgot to ask for sedimentation rate which, when corrected, was 76 mm. per hour. Congo red was normal; serology, agglutination, stool for ova, and electrocardiogram negative. Chest and gastrointestinal roentgenograms normal.

VISITING M.D: Sigmoidoscopy? X-ray of colon?

PART III

ATTENDING M.D: Mucosal swelling in entire colon. Many small ulcerations in transverse and descending colon and proximal sigmoid. Sigmoidoscopy revealed finely granular friable areas in bowel to a depth of 18 cm. Bled easily.

VISITING M.D: *(Talks to patient a minute.)* The boy is apparently in fine spirits and his appetite is good. Let's step outside. *(In corridor)* The fine multiple ulcerations are consistent with chronic ulcerative colitis. There is definite hepatic disturbance—enlargement, function abnormality evidenced by elevated total serum protein, abnormal albumin-globulin ratio, normal total cholesterol and diminished esters, diminished prothrombin, and elevated phosphatase for a boy of 12.

ATTENDING M.D: We had come to the conclusion he had ulcerative colitis, but why? What do we do next?

VISITING M.D: With stool cultures negative, we'll have to call it idiopathic. The elevated sedimentation

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rate is consistent. I presume the anemia is macrocytic.

ATTENDING M.D: Mean corpuscular volume is 108.

VISITING M.D: We now assume that the initial illness was the same as this. There was and is no evidence of structural lesion of the heart.

ATTENDING M.D: Psychogenic?

PART IV

VISITING M.D: Whatever the primary etiology of ulcerative colitis, the changes are now organic and it must be approached from an organic point of view. The boy has ulcerative colitis and cirrhosis of the liver. These two conditions are quite frequently coexistent, and the liver disorder is usually presumed to be secondary to the bowel disturbance. The amazing thing to me is the development of cirrhosis in colitis of such short duration.

ATTENDING M.D: You speak as if it were certain.

VISITING M.D: Get a biopsy.

ATTENDING M.D: *(Next day)* The biopsy showed complete distortion of the liver lobules, with wide fibrous tissue, and greatly proliferating bile ducts . . . typical postnecrotic portal cirrhosis. Deficiency syndromes seem to depend on which dietary factors may fail to be absorbed. One presumes a sudden insult to the liver, with necrosis and cirrhotic healing. It's hard to speculate beyond that.

VISITING M.D: For treatment, I suggest Azopyrin, a drug like sulfapyridine but more slowly absorbed; dose is 0.5 gm. per tablet. Give the patient 6 tablets a day. Keep caloric intake up. The lipotropic substances are without value here. The prognosis is grave. The outlook is almost without hope, but not altogether. I would be reluctant to give cortisone. In my experience it has not been of conclusive help, and the dangers of fluid retention are great.

"I bet those little frogs hate to see me come in!"

Short Reports

Oncology

Palliative Adrenalectomy for Carcinoma

Bilateral adrenalectomy is now a relatively safe procedure and may somewhat inhibit mammary and prostatic carcinoma. Drs. Charles Huggins and Delbert M. Bergenstal of the University of Chicago report 29 such consecutive operations without fatality. Symptoms of advanced prostatic cancer improved in 4 of 6 cases and mammary growth in 3 of 6. Patients frequently gained weight, and tumors shrank, with relief of intractable bone pain, reduction of high acid phosphatase levels, and rise in total serum protein, hemoglobin, and red cell count. No change occurred in 4 neoplasms of other types. Ordinarily, replacement therapy included 25 mg. of cortisone acetate given twice daily by mouth and 3 gm. of sodium chloride, with or without 2 to 4 mg. of desoxycorticosterone acetate daily.

Cancer Research 12:134-141, 1952.

Circulation

Peripheral Vascular Disease

Vasodilators injected directly into the arteries relieve obstructive conditions for longer periods than intravenous, subcutaneous, or intramuscular therapy. Tetraethylammonium bromide was employed by Drs. Otto Selvaag and Rolf Holmboe of Drammen Hospital, Norway, in 15 cases of obliterative arterial disease. From 2 to 4 cc. of 10% solution was injected into the femoral artery in two to four minutes two or three times weekly for two weeks. Injections were then continued at intervals of one to three weeks to a total of 8 to 12 doses. Symptoms were completely eliminated in 5 cases, much improved in 5, and somewhat relieved in 2. In 7 instances, results were satisfactory on review six to nine months later. Treatment failed in a case of more than eighteen years' duration and in 2 cases of arteriosclerosis complicated with diabetes.

Acta med. Scandinav. 142:132-142, 1952.

Treatment

Oral Diuretic

The uracil derivative 1-propyl-3-ethyl-6-aminouracil has good diuretic power and produces no serious toxic effect after oral administration. For 10 healthy subjects at Johns Hopkins University, Baltimore, sodium and water output from a day's treatment equaled that achieved by mercurials, report Dr. A. Kattus and associates. Diuresis was obtained in 73% of 37 hospital cases with edema; results were excellent in 54%. Occasional undesirable reactions of anorexia, nausea, vomiting, or diarrhea may be lessened by limiting adult dosage to 1 gm. per day.

Am. J. Med. 12:319-330, 1952.

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* Neal, M. P.: Diagnostic Drifts, Deceptions and Common Misses. J. A. M. A., 146:539 (June 9) 1951.

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Oncology

Antineoplastic Synergisms

Guanazolo and aminopterin in combination have additive good effects on mice with acute lymphoid leukemia. The possibility that combinations of two antineoplastic drugs might prove synergistic while toxic effects remained nonadditive was investigated by Drs. Abraham Goldin and associates of Johns Hopkins University, National Cancer Institute, U. S. Public Health Service, and U. S. Marine Hospital, Baltimore. The effects of combinations of guanazolo, aminopterin, alpha-peltatin, 2,4,6-triethylenimino-*s*-triazine, and methylbis (2-chlorethyl) amine on the survival time, tumor volume, and white blood count were studied in mice with acute transplantable lymphoid leukemia. Guanazolo plus aminopterin was most effective on all three indexes of antineoplastic action. These drugs are known antimetabolites for purines and folic acid. Additive effects on survival time were noted with combinations of guanazolo or aminopterin with alpha-peltatin. All combinations employed caused some reduction in the tumor growths except methylbis (2-chlorethyl) amine and aminopterin. The white blood count response varied with each combination. Using host survival time as the best index of antileukemic effect, the studies suggest that with certain drug combinations some dissociation of systemic toxicity and antitumor properties may exist. However, in most instances synergistic antineoplastic effects are accompanied by additive toxicity.

Cancer 5:153-160, 1952.

Nutrition

Hypoallergic Milk

The protein antigen in cow's milk that produces allergic reactions in babies is reduced by a temperature of 115°C. maintained for two hours. However, necessary vitamins are destroyed, including B_{12}. Recently Dr. R. M. Tomarelli and associates of Mason, Mich., restored the nutritional quality by an adequate supplement. Untreated and heated milk powders were given to groups of rats, and subsequent weights were compared. Vitamin B_{12} was not impaired by ordinary sterilization of infant formulas at 115°C. for fifteen minutes.

Pediatrics 9:89-93, 1952.

Endocrinology

Antiarthritic Factors

Arthritis in rats due to local chemical irritation from formaldehyde is alleviated by injection of ascorbic acid or by the addition of 2% potassium chloride to drinking water. Initial swelling is not prevented, but inflammatory changes about the joint are reduced and recovery is hastened. Subcutaneous doses of cortisone limit both swelling and inflammatory effects. Dr. Habeeb Bacchus of the George Washington University, Washington, D. C., believes that potassium chloride probably acts by suppressing the mineralocorticoid, DCA-like hormone that exacerbates arthritis. The ascorbic acid mechanism is not understood but apparently does not involve adrenal cortical stimulation.

Endocrinology 49:789-794, 1951.

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clinical report 634 patients

"In all, 14 failures occurred in 4046 woman-months exposure, giving a pregnancy rate of 4. This figure is substantially less than pregnancy rates reported from other series using jelly-alone, suppositories, and diaphragm-jelly combinations.

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composition: PRECEPTIN vaginal gel contains the active spermicidal agents p-Diisobutylphenoxypolyethoxyethanol and ricinoleic acid in a synthetic base buffered at pH 4.5.

bibliography: †Stromme, W. B., and Rothnem, M. S.: Clinical Experience with a New Gel-Alone Method of Contraception. World Population Problems and Birth Control, Annals of New York Academy of Sciences, Vol. 54, Art. 5, in press.

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Manufacturers of Ortho-Gynol® vaginal jelly, Ortho® Creme, Ortho® Kit, and Ortho® White Kit.

Atomic Medicine

Thyroid Function

Radioactivity measured externally over the thyroid region with a symmetric 4-tube Geiger-Müller counter permits a more exact determination of radioiodine uptake and turnover than is possible using urinary I^{131} excretion or single-tube counters.

The 4-tube counter, with an accuracy stated to be $\pm$ 5%, has been employed by Dr. A. Stone Freedberg and associates of Beth Israel Hospital and Harvard University, Boston, to estimate I^{131} uptake and turnover in 450 cases.

A normal thyroid gland retains 29% of a 100 to 150 microcurie oral tracer dose of I^{131} given the day before. The uptake is significantly higher, 71%, in hyperthyroid patients. In patients considered euthyroid after I^{131} therapy for hyperthyroidism, the average uptake is 39.5%. Patients with apparently nontoxic goiters retain 37.1% of the tracer dose. Retention is only 11.9% for hypothyroid patients. Among hyperthyroid patients, diffuse toxic goiters have a significantly greater uptake than nodular goiters.

Factors that influence thyroid iodine metabolism must be evaluated before diagnostic accuracy is claimed. Iodine-containing compounds, such as potassium iodide and Diodrast, reduce I^{131} uptake, as do dessicated thyroid, potassium thiocyanate, propylthiouracil, and corticotropin. Euthyroid or hypothyroid patients have greater than ordinary uptake after I^{131} therapy and more rapid turnover for periods of three months to two years afterward.

In contrast to the higher tracer uptake, subsequent therapeutic dosage given less than three months after the original treatment results in almost total urinary excretion of the isotope in seventy-two hours.

Although thyroid function is considered normal in congestive heart failure, high normal uptake at twenty-four hours with maximum retention at two to seven days is observed. This abnormal pattern may be due to I^{131} infiltration into edematous tissues.

Metabolism 1:26-48, 1952.

whether he is "middle-aged" or "aged"—

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For the man of fifty complaining of climacteric symptoms, ORETON® (Testosterone Propionate U.S.P.) is indicated to overcome androgen deficiency. For the man of eighty whose strength is slowly failing, but in whom no cause other than senescence can be found, ORETON is indicated for its anabolic, tissue-building property.

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THE TRUTH ABOUT
FROZEN ORANGE JUICE

Significant Dietary Advantages Of Fresh-Frozen Minute Maid Orange Juice Over Home-Squeezed Orange Juice Shown By Independent Research

RECENT assays[1] emphasize the nutritional superiority of reconstituted Minute Maid Fresh-Frozen Orange Juice over home-squeezed orange juice in three respects:

a. Average levels of natural ascorbic acid were significantly *higher* in Minute Maid;

b. Peel oil content was significantly *lower;*

c. Bacterial counts were dramatically *lower.*

Two reasons for Minute Maid's higher ascorbic acid content are advanced:

First, oranges vary widely in ascorbic acid content.[2] Thus, whole oranges squeezed a few at a time provide a highly erratic source of Vitamin C. Each can of Minute Maid, however, represents the pooling of juice from hundreds of thousands of oranges; thus wide variations in nutrients tend to be eliminated.

Second, because it is frozen, Minute Maid loses none of its ascorbic acid content before reaching the consumer.[3] Whole fruit, however, is subjected to variations in temperature, and care in handling cannot be maintained from tree to table. Laboratory tests have shown an average ascorbic acid loss of 10.7% in whole oranges after 11 days under simulated storage and shipping conditions.

Peel oil, cause of allergic response and poor tolerance, especially in infants,[4] is held to an arbitrary minimum in Minute Maid. Samples of home-squeezed juice expressed by typical housewives showed peel oil contents up to 700% higher.

Bacterial counts were found to be as high as 350,000 per ml. in home-squeezed samples—but were uniformly low in Minute Maid. Technicians ascribe this to the combination of rigid sanitary controls in the Minute Maid process and the low pH and low temperatures at which the juice is kept. High bacterial counts in home-squeezed juice are doubtless due to contamination from the exterior peel which is unknowingly added to the juice during preparation.

In view of the above findings, more and more physicians now specify Minute Maid Fresh-Frozen Orange Juice in lieu of home-squeezed orange juice.

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(2) *U. S. Department of Agriculture Technical Bulletin No. 753, December, 1940.*

(3) *Roy, W. R., and Russell, H. E., Food Industries, Vol. 20, pp. 1764-1765 (1948).*

(4) *Joslin, C. L., and Bradley, J. E., Journal of Pediatrics, Vol. 39, No. 3, pp. 325-329 (1951).*

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Wallace R. Roy, Ph.D., Director of Research

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"What I said was 'liver function' not 'lover function' tests!"

New federal regulations prohibit prescription refill without authorization by the physician.

Revised Prescription Regulations

HUGO H. SCHAEFER, PH. D.
Long Island University, Brooklyn

NEW federal regulations restricting the refilling of prescriptions promise to be a source of annoyance to busy physicians and pharmacists.

The legislation is the Durham-Humphrey amendment to the Federal Food and Drug Act, and its regulations prohibit a pharmacist from refilling a prescription unless: [1] the prescription calls for a simple household remedy, [2] the physician has stated on the original prescription that refill is permitted, or [3] the pharmacist telephones or writes the physician and obtains authorization for the refill.

While the medical and pharmaceutical professions generally approved past drug legislation, the new restrictive federal controls on prescription filling are being received rather coolly, observes Hugo H. Schaefer, Ph.D.

Traditionally, a physician tells the patient to have a prescription refilled. Now, however, such authorization is illegal, and to refill such a prescription, the pharmacist must contact the physician and obtain verbal or written authorization.

Physicians can save the annoyance and loss of time entailed in frequent telephone calls from pharmacists, however, by writing upon the original prescription such phrases as "N.R." *(non repetatur)*, "repeat as often as desired," "repeat once" (or desired number), or "repeat for period of 3 months" (or desired period of time). Pharmacists will observe such notations.

(Continued on page 206)

"Mama! SAY something!"

How recent drug legislation affects the filling of prescriptions. New York Med. 8:23-24, 36, 1952.

Glycosuria and Ketonuria in Patients Receiving ACTH or CORTISONE*

All patients should have a complete urinalysis before receiving corticotropin (ACTH or Cortisone). Particular attention should be paid to the presence of glucose or acetone in the urine.

Frequent testing of the urine for sugar and acetone is recommended during the administration of ACTH or Cortisone.

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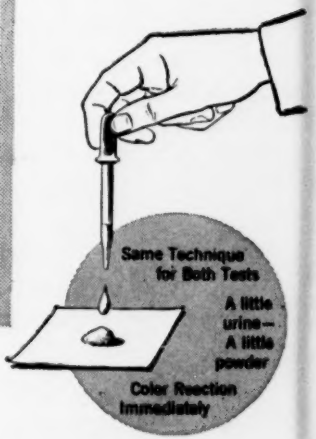
Increase in insulin dosage is often required in the diabetic patient receiving ACTH or Cortisone.



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The simplest, fastest urine sugar test known.

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For the rapid detection of acetone in urine.

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For Office—Medical Bag—Testing by patients at home.

Contains a vial of Galatest and Acetone Test (Denco), a dropper and color chart. Price $2.25

Galatest and Acetone Test (Denco) require no special laboratory equipment, test tubes, liquid reagents, or external sources of heat.

One or two drops of the specimen to be tested are dropped upon a little of the powder and a color reaction occurs immediately if acetone or reducing sugar is present.

Patients are easily taught to use Galatest and Acetone Test (Denco).

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***BIBLIOGRAPHY**

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A brief discussion of the rationale of Knox Gelatine in vasodilation is on the facing page

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Available at Grocery Stores in 4-Envelope Family Size and 32-Envelope Economy Size Packages.

Abel[1] showed a marked increase in metabolic rate (**Specific Dynamic Action**) from the ingestion of a protein meal consisting mostly of gelatine. The effect was marked and sustained. Abramson and Fierst[2] had demonstrated a marked increase in peripheral blood flow from a protein but not from a carbohydrate meal, so that the increase could not have been due to the increase in oxygen consumption alone.

Recent scientific study[3] showed that the effective and sustained increase in peripheral blood flow is due to the high **Specific Dynamic Action** of proteins. Gubner et al[3] determined oxygen consumption; the skin temperature of the fingers, toes and forehead; the vascular oscillations of the calf and forearm muscles; and the blood flow of the hand and foot by a venous occlusion method,[4] before and after the ingestion of glycine. The increase in blood flow to the toes was fully equal to posterior tibial nerve block in the 6 cases in which comparison was made. This indicated maximal vasodilation, attained in 1½ to 3 hours after ingestion.

The **Specific Dynamic Action** of proteins is due to four amino acids, including glycine. Gelatine contains over 85 per cent of these amino acids. Following a protein meal high in gelatine, there occurs a peak in **Specific Dynamic Action** averaging 20 per cent of basal levels, and an increase in peripheral blood flow lasting over seven hours.[5]

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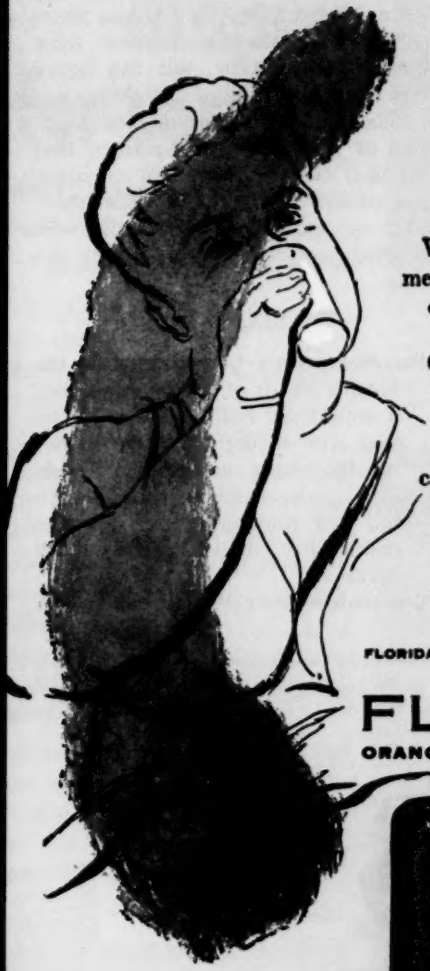
Without specific directions for refills, a pharmacist will be under constant pressure from the patient who desires more medication. The pharmacist will be forced to phone the physician for authorization, not only wasting the physician's and pharmacist's time but also endangering the patient's welfare if a physician cannot be reached and necessary medication cannot be dispensed.

Recognizing these problems, many pharmacists plan to set aside the prescriptions in which the physician has failed to express refill desires and send the physician a double postcard. Half of the card will give the patient's name and the medication prescribed, while the return half will provide notations governing refills for the physician to check and return to the pharmacist. The returned card will then be made part of the original prescription, and the pharmacist will be guided accordingly.

The regulation listed is just one of the new restrictive measures resulting from the recently passed Durham-Humphrey bill—measures affecting the everyday practice of medicine and showing the present trend of federal control over the health professions. While a great need exists for unified opposition to such regulations, physicians and pharmacists should become aware of the new prescription restrictions and be sure to be in compliance with the regulations.



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* *Postgrad. Med. 9:106, 1951.*

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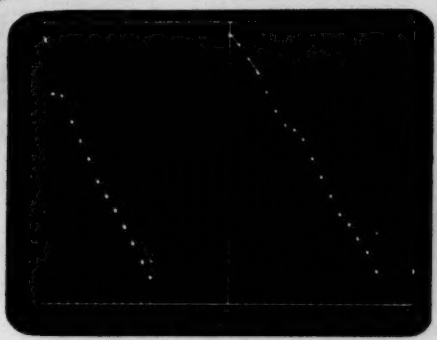


CHART OF WEIGHT LOSS
BROKEN LINE—OBSERVED LOSS • SOLID LINE—PREDICTED LOSS

Washington Letter

(Continued from page 60)

eliminated, so even individuals may refuse to register with impunity.

The Justice Department has announced that an appeal is planned, probably directly to the Supreme Court. Talk of introducing new legislation to meet the lower court's objections is discounted because calendars of both House and Senate are so crowded.

Aviation Medicine

Sessions of the Aero Medical Association in Washington disclosed that U. S. Civil Aeronautics Authority still has an impressive medical program. However, the program is not so extensive as immediately after the war.

CAA has 12 full-time physicians on its staff and another 9 located in the field. In addition, it has a list of 2,800 designated private physicians who examine applicants for flying licenses on a fee basis, with the applicants paying the fee. At one time, 400,000 or so examinations were conducted annually, but the figure has dropped to about 240,000.

The association, in one of a series of resolutions, complained that medical colleges were not conducting enough courses in aviation medicine to accommodate doctors who wanted postgraduate training in this field.

Washington Notes

Dr. Magnuson's Commission on the Health Needs of the Nation called a temporary halt to federal hearings after taking testimony on two of the most controversial subjects: federal aid to medical, dental, and nursing schools, and to community public health departments.

Complaints about House reduction in

"I've a healthy appetite which I can't afford."

Fast, sterile draping for surgery

with new pre-sterilized self-adhering drapes of moistureproof plastic

"Scotch" Surgical Drapes simplify draping of even the most difficult areas. These new drapes are made of a soft plastic film that maintains a fixed sterile field.

A special pressure-sensitive adhesive is used on these drapes that holds tight on irregular surfaces, yet causes far less irritation than any commercial adhesive plaster now available. No special preparation of skin surface is required beyond making certain the skin is dry.

"Scotch" Surgical Drapes are disposable after use. Besides saving time in draping the patient, they cut the handling expense involved in the use of conventional linens.

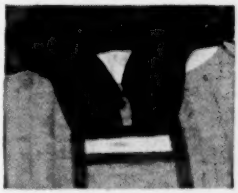
SCOTCH BRAND
Surgical Drapes

Made in U.S.A. by Minnesota Mining & Mfg. Co., St. Paul 6, Minn., also makers of more than 200 varieties of pressure-sensitive adhesive tape sold under the trademark "Scotch."

Made by the manufacturers of "Scotch" Brand Cellophane Tape

SIX STYLES of drapes cover most operative techniques. Style No. 1200 (illustrated) isolates sites for minor surgery, repair of lacerations, surgery of extremities. Styles No. 1100 and 1120 demarcate angular sites. Style No. 1300 holds firmly around orbital area, is also suitable for neurosurgery and ear surgery. Style No. 1400 is used wherever a large rectangular drape is desired. Style No. 1420 is designed for urological procedures, particularly transurethral resections.

Quick Facts about "Scotch" Surgical Drapes



What makes these new drapes different from conventional drapes?

They are made of soft-draping plastic film that completely isolates operative site, forms moisture-proof barrier against contamination through absorption.

How are they held in place?

Every drape has a border of pressure-sensitive adhesive which is pressed in place around the operative site. The adhesive is protected by a paper liner until ready for application.

How are "Scotch" Surgical Drapes sterilized?

Every drape is steam autoclaved in the package at 240°F. for 40 minutes. The aluminum foil package maintains complete sterility.

How are they removed from the package without contamination?

The special triple-wrap package makes it easy to remove the drapes under continuously sterile conditions.

Hill-Burton hospital construction funds actually were unjustified. The House approved the full Budget Bureau figure of $75,000,000 for the next fiscal year, but held out $20,000,000 from the funds for liquidation of already authorized contracts. Next year the $20,000,000 will be voted in plenty of time to pay these bills as they come due.

Three medical advisory groups have hurried to the front with resolutions endorsing the Veterans Administration's medical program. They are the Legion's Rehabilitation Advisory Board and two VA medical advisory boards. In both cases, the idea is to restore confidence in the program before undercover criticism can do any serious damage.

Construction industry, which operates apart from other industries under the Wage Stabilization Board structure, has its own policy for health and welfare funds. The size of employer contributions, rather than extent of benefits, will be the criterion. In industry generally, benefits are considered the guide.

Unless the Senate does something about it, VA will have to reduce fees paid to "home-town" physicians and dentists. The House voted a 10% cut in funds for this work, and ordered VA to make the saving in routine fees rather than in payments to highly skilled specialists.

A relatively small sum—possibly $2,000,000—has been allowed for defense area hospital construction in a House-approved supplementary appropriation bill. Application forms won't be available until the bill becomes law.

WHEN FOOD INTAKE *is inadequate*

When the patient's food intake is inadequate to supply essential nutrients in proper amounts, clinical experience has demonstrated the supportive value of a dietary supplement providing substantial quantities of virtually all needed nutrients—protein, vitamins, minerals, carbohydrate, and fat. The choice of the supplement prescribed, to a large extent, can determine the efficacy of the supplemented diet, since over-all nutrient adequacy is the primary aim.

It is apparent from the data shown below that Ovaltine in milk can serve well in markedly increasing the intake of virtually all known nutrients. Taken daily during periods of inadequate consumption of other foods, it offers an excellent means for preventing subclinical nutritional deficiencies which can undermine general health or retard recovery from illness.

The appealing flavor of Ovaltine makes it acceptable to children as well as adults, including the aged. Ovaltine in milk is easily digested, an important feature when digestive disturbances are a factor.

Patients have the choice of either Plain or Chocolate Flavored Ovaltine, both of which are similar in their wealth of nutrients.

THE WANDER COMPANY, 360 N. MICHIGAN AVE., CHICAGO 1, ILL.

Ovaltine

Three Servings of Ovaltine in Milk Recommended for Daily Use Provide the Following Amounts of Nutrients

(Each serving made of ½ oz. of Ovaltine and 8 fl. oz. of whole milk)

MINERALS		VITAMINS	
*CALCIUM	1.12 Gm.	*ASCORBIC ACID	37 mg.
CHLORINE	900 mg.	BIOTIN	0.03 mg.
COBALT	0.006 mg.	CHOLINE	200 mg.
*COPPER	0.7 mg.	FOLIC ACID	0.05 mg.
FLUORINE	3.0 mg.	*NIACIN	6.7 mg.
*IODINE	0.7 mg.	PANTOTHENIC ACID	3.0 mg.
*IRON	12 mg.	PYRIDOXINE	0.6 mg.
MAGNESIUM	120 mg.	*RIBOFLAVIN	2.0 mg.
MANGANESE	0.4 mg.	*THIAMINE	1.2 mg.
*PHOSPHORUS	940 mg.	*VITAMIN A	3200 I.U.
POTASSIUM	1300 mg.	VITAMIN B_{12}	0.005 mg.
SODIUM	560 mg.	*VITAMIN D	420 I.U.
ZINC	2.6 mg.		

*PROTEIN (biologically complete)	32 Gm.
*CARBOHYDRATE	65 Gm.
*FAT	30 Gm.

*Nutrients for which daily dietary allowances are recommended by the National Research Council.

Current Books & Pamphlets

This catalogue is compiled from all available sources, American and foreign, to insure a complete listing of the month's releases.

Medicine

CHRONIC BRONCHITIS *by* Trevor Howell. 111 pp., ill. Butterworth & Co., London. 17*s*. 6*d*.

INVESTIGATIONS OF DISEASE *by* Morton Whitby. 304 pp., ill. Cutler Publishing Co., Chicago. $6

Cardiovascular Diseases

THE APPROACH TO CARDIOLOGY *by* J. Crighton Bramwell. 123 pp., ill. Oxford University Press, New York City. $3.75.

Psychosomatic Medicine

A HANDBOOK OF PSYCHOSOMATIC MEDICINE; WITH PARTICULAR REFERENCE TO INTESTINAL DISORDERS *by* Alfred J. Cantor. 302 pp., ill. Julian Messner, New York City. $5

NEW CONCEPTS OF HYPNOSIS, AS AN ADJUNCT TO PSYCHOTHERAPY AND MEDICINE *by* Bernard C. Gindes. 277 pp. Julian Messner, New York City. $4.

HYPNOSETHERAPIE UND PSYCHOSOMATISCHE PROBLEME *by* Franz Andreas Völgyesi. 203 pp. Hippokrates-Verlag, Marquardt & Co., Stuttgart. 8.25 M.

Laboratory Medicine

APPROVED LABORATORY TECHNIC *by* John A. Kolmer, Earle H. Spaulding, *and* Howard W. Robinson. 5th ed. 1,180 pp., ill. Appleton-Century-Crofts, New York City. $12

GROUPING, TYPING AND BANKING OF BLOOD *by* Otaker Jaroslav Pollak. 163 pp., ill. Charles C Thomas, Springfield, Ill. $5.75

Geriatrics

GROWING IN THE OLDER YEARS *edited by* Wilma T. Donahue *and* Clark Tibbitts. 204 pp. University of Michigan Press, Ann Arbor, Michigan. $2.50

THE ANATOMY OF HAPPINESS *by* Martin Gumpert. 310 pp. McGraw-Hill Book Co., New York City. $3.50

PHYSICAL MEDICINE AND REHABILITATION FOR THE AGED *by* Walter S. McClellan. 89 pp., ill. Charles C Thomas, Springfield, Ill. $2

Bacteriology

RECENT ADVANCES IN BACTERIOLOGY *by* James H. Dible *and* J. D. Mac Lennan. 3d ed. 325 pp. ill. Blakiston Co., Philadelphia. $5

IMMUNO-CATALYSIS AND RELATED FIELDS OF BACTERIOLOGY AND BIOCHEMISTRY *by* Manasseh G. Sevag. 2d ed. 547 pp., ill. Charles C Thomas, Springfield, Ill. $12

Therapeutics

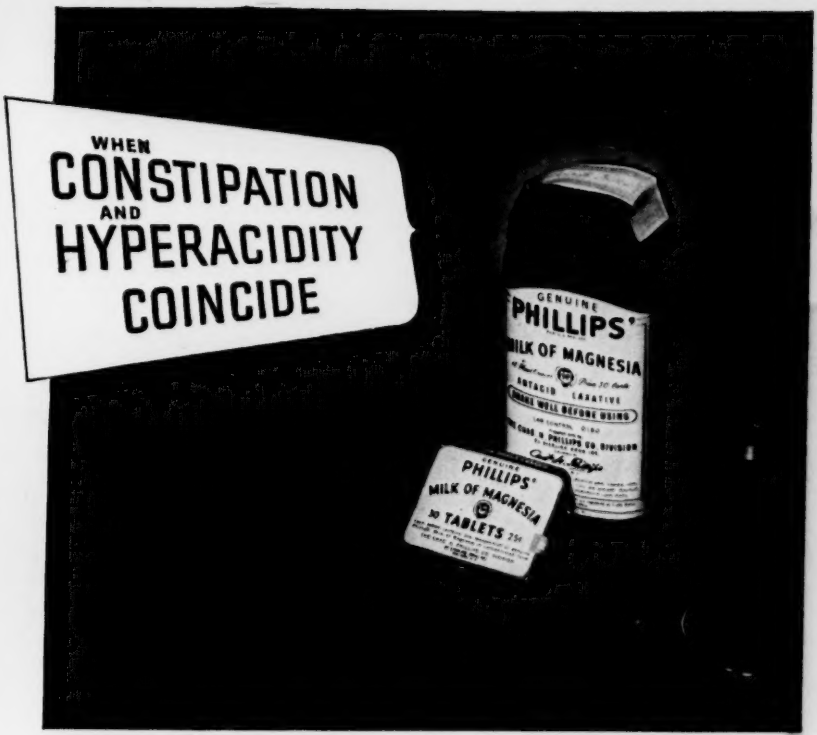
MODERN HEADACHE THERAPY *by* Arnold P. Friedman. 164 pp., ill. C. V. Mosby Co., St. Louis. $4

HEPARIN UND HEPARINOIDE, DICUMAROL *by* Theodor Halse. 225 pp., ill. S. Hirzel, Zurich. 13.50 fr.

DIE ULTRASCHALLTHERAPIE: PRAKTISCHE ANWENDUNG DES ULTRASCHALLS IN DER MEDIZIN *edited by* Reimar Pohlmann *et al.* 392 pp., ill. Hans Huber, Bern, Switzerland. 32 Sw. fr.

Nellie Nifty, R.N.

by kaz



For more than 75 years
Phillips' Milk of Magnesia has been
generally accepted by the medical profession
as a standard therapeutic agent
for constipation and gastric hyperacidity

As a laxative—Phillips' mild, yet thorough action is dependable for both adults and children.

As an Antacid—Phillips' affords fast, effective relief. Contains no carbonates, hence produces no discomforting flatulence.

DOSAGE:

Laxative: 2 to 4 tablespoonfuls.
Antacid: 1 to 4 teaspoonfuls, or 1 to 4 tablets.

Prepared only by **THE CHAS. H. PHILLIPS CO. DIVISION** • **1450 BROADWAY, NEW YORK 18, N. Y.**
of Sterling Drug Inc.

3

Removes intestinal toxins

RESION

- A palatable suspension of multiple adsorbents
- Effective in diarrhea of infants, children and adults
- Controls the nausea and vomiting of pregnancy
- Effective in bacterial gastrointestinal toxicity
- Valuable adjuvant in the treatment of food poisoning, colitis and gastroenteritis

Available: Bottles of 4 and 12 fluidounces.

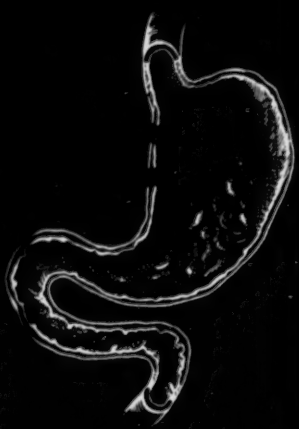
8 important advantages for ulcer therapy—

RESINAT H-M-B

Resinat	0.5 Gm.
Homatropine methylbromide	1 mg.

1 Quick relief of ulcer pain
2 Speeds healing of peptic ulcer
3 Attracts and binds both pepsin and hydrochloric acid
4 Blocks spasm: relaxes the gastrointestinal tract
5 Coats the crater with a protective film
6 Does not cause acid rebound, alkalosis, constipation or diarrhea
7 Does not remove chlorides, phosphates, minerals or vitamins
8 Pharmacologically inert

Available: Bottles of 36, 100 and 1,000 tablets.



Removes sodium—controls edema

NATRINIL

- To reduce blood pressure in hypertension
- To relieve edema in hypertension, congestive heart failure and cirrhosis
- Controls sodium absorption with minimal dietary restrictions
- Invites patient cooperation by allowing a more palatable diet
- Lessens or eliminates the need for diuretics

Available: Powder, 10 ounce bottles and boxes of 24 individual 10 gram packets.

THE
NATIONAL DRUG CO.

In G.I. infections—diarrhea—nausea of pregnancy

In peptic ulcer

In hypertension, congestive heart failure and cirrhosis

PATIENTS ... *I Have Met*

The editors will pay $1 for each story published. No contributions will be returned. Send your experiences to the Patients I Have Met Editor, MODERN MEDICINE, 84 South Tenth St., Minneapolis 3, Minn.

Improvement Noted

The call was from the wife of a patient who was convalescing from pneumonia. She said her husband seemed to have a fever and would I come right over. I was engaged at the moment, so I asked her to take her husband's temperature and call me back.

In a few minutes she called again. "Everything's all right now," she said happily. "I didn't have a thermometer, so I used a barometer. It registered 'very dry,' so I gave him some whisky. He's feeling fine now."—W. J. B.

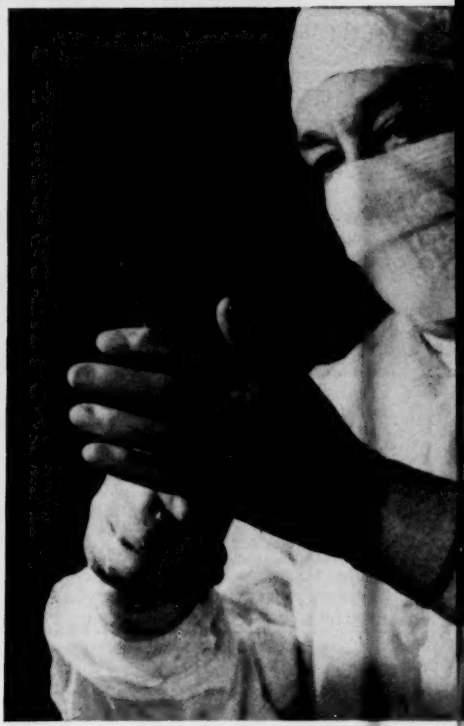
Extra Careful

In talking to a young mother about her infant, I stressed the importance of sterilizing the nipples as well as the bottles.

"I always do," replied the woman brightly, "and then, just to make sure that the holes are open, I blow through them."—A.S.A.

"Must you always be running after that redhead?"

B.F.Goodrich



Thick gloves for electricians —thin gloves for surgeons

A life could depend on either

THE B. F. Goodrich electricians' glove shown above must stand a test of 10,000 volts of electricity before it passes inspection. Tissue-thin surgeons' gloves also provide the surgeon with maximum comfort and glove strength. They are both made by a special process that permits a glove to be made from a single layer of the purest latex.

B. F. Goodrich surgeons' gloves are comfort-designed with extra long, restricted wrists, full backs and tapered fingers. A full line of accurate sizes and in four types: operating gloves, "Cutinized" gloves with a slightly roughened surface, short examining gloves, and "Special Purpose" gloves for those who develop an allergic dermatitis from wearing ordinary rubber gloves.

B. F. Goodrich also makes a complete line of Koroseal hospital sheeting and film, and a line of rubber items for hospital and professional use. To order these items, contact your hospital or surgical supply dealer. *The B. F. Goodrich Company, Sundries Division, Akron, Ohio.*

B.F. Goodrich

Surgeons' Gloves

Can't Do Both

One of my patients called to tell me he wasn't feeling well.

"Did you drink 2 qt. of water and stay in bed as I told you to?" I asked.

"Now, Doc," he whined, "you got to make up your mind what you want me to do. I drank the water."—R.W.

Attached to a check I recently received from a patient to whom I had administered an anesthetic was a note: "For antiseptic services."—M.P.W.

Different Approach

"What's the name of the new minister?" sighed the octogenarian from her sick bed.

"That's not the minister, Mother," said her daughter, "that's the geriatrician, a doctor who specializes in the complaints of elderly folks."

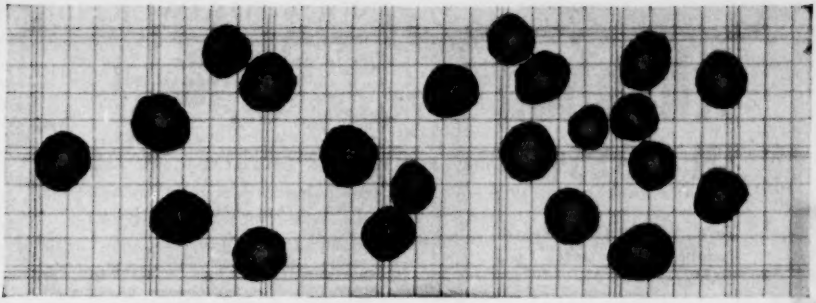
"Hm! A doctor, eh? I kind of thought he was too familiar for a preacher!"—F.T.

Let's Be Delicate

Two cockroaches were lunching, and one was regaling the other with an account of a new lunchroom in the neighborhood.

"The refrigerator is spotlessly white, the floor sparkles like polished metal, there isn't a crack in the walls or ceiling. In fact there isn't a speck of dirt in the place."

"Please," protested the other slightly nauseated, "not while I'm eating."—S.O.T.



when iron alone is not enough

To accelerate recovery in the treatment of microcytic hypochromic anemia, you will want to prescribe **not only iron but all the elements known to be essential for the development and maturation of red blood cells.** This is particularly true when the anemia is the result of blood loss. For prompt and effective hematinic therapy, consider the "Bemotinic" formula below.

each capsule contains:

Ferrous sulfate exsic. (3 gr.)	200.0 mg.
Vitamin B_{12} U.S.P. (crystalline)	10.0 mcg.
Gastric mucosa (dried)	100.0 mg.
Desiccated liver substance, N.F.	100.0 mg.
Folic acid	0.67 mg.
Thiamine HCl (B_1)	10.0 mg.
Vitamin C (ascorbic acid)	50.0 mg.

In macrocytic hyperchromic anemias, "Bemotinic" will provide additional support to specific therapy, or may be used for maintenance once remission has been achieved. In many pernicious anemia patients there is need for iron because of a co-existent iron deficiency.

Suggested Dosage: One or two capsules (preferably taken after meals) three times daily, or as indicated.

No. 340—Supplied in bottles of 100 and 1,000

for just the right shade of red

"Bemotinic"

CAPSULES

Ayerst, McKenna & Harrison Limited
New York, N. Y. • Montreal, Canada

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Babies Enjoy Better-Tasting Heinz Baby Foods!

Even The Tiny Tots In Your Care Will Appreciate Finer-Tasting Heinz Baby Foods! Heinz Retains Fresh Flavors And Colors—And A High Degree Of Vitamins And Minerals—By *Scientifically* Cooking Select Fruits And Vegetables From America's Finest Farms And Orchards!

Here's Why Doctors Everywhere Recommend Heinz Baby Foods:

1. Heinz kitchens are located in the heart of America's most fertile garden spots—so no time is lost between field and kettle.

2. Heinz Baby Foods are scientifically cooked for higher nutritive value—finer flavor, color and texture!

3. Heinz quality is laboratory controlled for absolute uniformity.

4. Better-tasting Heinz Baby Foods are backed by the 83-year-old 57 symbol of quality.

To Be Sure-Recommend

HEINZ 57 Baby Foods

OVER 50 VARIETIES: STRAINED FOODS . . . JUNIOR FOODS . . . PRE-COOKED CEREAL FOOD . . . PRE-COOKED OATMEAL CEREAL . . . PRE-COOKED BARLEY CEREAL

STILL..

CLINICIAN'S CHOICE
for
optimum protection

UNSURPASSED SECURITY..... in conception control is provided by the combination of an individually fitted occlusive diaphragm with a dependable spermatocidal jelly... according to authoritative current medical opinion.[1,2]

UNSURPASSED QUALITY..... is provided by **RAMSES*** Vaginal Jelly† and the **RAMSES** Flexible Cushioned Diaphragm ... specifically designed to insure the utmost in effectiveness and acceptability.

1. Report to Council on Pharmacy & Chemistry, A.M.A.: J.A.M.A. 148:50 (Jan. 5) 1952. 2. Dickinson, R. L.: Techniques of Conception Control, ed. 3, Baltimore, Williams & Wilkins Company, 1950, p. 21.

*The word RAMSES is a registered trademark of Julius Schmid, Inc. †Active ingredients, by weight: Dodecaethyleneglycol monolaurate 5%; boric acid 1%; alcohol 5%.

A MEDICAL OF Ramses DEPENDABILITY

gynecological division

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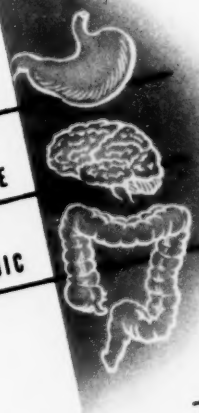
quality first since 1883

When Hyperacidity is a problem—



Silaloid *Tablets*

ANTACID THERAPY can be as impracticable as a one legged stool. Too often the influence of the psychogenic component is overlooked in concern with gastric and intestinal pain.

Silaloid provides a *palatable* and *practical*, over-all therapeutic answer to conditions ranging from hyperacidity to gastric and peptic ulcers. Silaloid can be swallowed, chewed or taken in a glass of water, where it disintegrates rapidly—in a few seconds.

In your patients requiring antacid therapy, prescribe Silaloid for its prompt and prolonged action and its over-all rationale.

DOSAGE: *Two tablets 3 to 4 times daily or as required.*

SUPPLIED: *In bottles of 100, 500, 1000 tablets.*

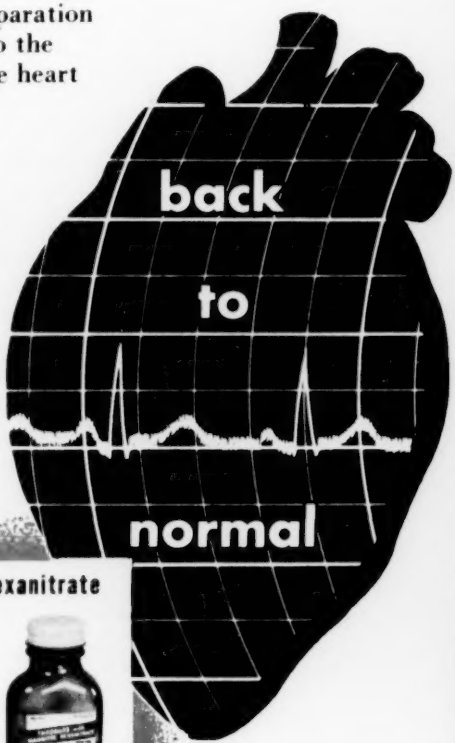
	Each SILALOID tablet contains:
ANTACID	*7 gr. magnesium trisilicate*—a non-systemic, non-constipating antacid sufficient to neutralize 45 cc. of 0.1 N. HCl.
SEDATIVE	*⅛ gr. phenobarbital*—to decrease tonus of the intestinal musculature and to provide central depressant action on the vagus.
ANTISPASMODIC	*1/1250 gr. hyoscyamine sulfate, 1/5000 gr. atropine sulfate*—to control excessive motor activity, hyperperistalsis and pylorospasm.

VANPELT & BROWN, INC. • *Pharmaceutical Chemists* • **RICHMOND 4, VIRGINIA**

in the management of

hypertension and angina pectoris

Theobarb with Mannitol Hexanitrate is useful in preventing attacks of tachycardia, insomnia or transient headache when these are premonitory signs of hypertension. This preparation helps forestall severe damage to the arterial system in the brain, the heart and in the kidneys.



Theobarb with Mannitol Hexanitrate is unique in its composition and has been specifically formulated to:

provide prolonged vasodilation, especially of the arterioles which are important in heart and kidney function,

produce myocardial stimulation and desired diuresis,

promote mild sedation for continued therapy with minimal side reactions.

Theobarb with Mannitol Hexanitrate

Each pink tablet contains:

Mannitol Hexanitrate	$\frac{1}{2}$ gr.
Phenobarbital	$\frac{1}{2}$ gr.
Theobromine	5 gr.

also **Theobarb Special with Mannitol Hexanitrate**

Each green tablet contains:

Mannitol hexanitrate	$\frac{1}{2}$ gr.
Phenobarbital	$\frac{1}{4}$ gr.
Theobromine	5 gr.

Available in bottles of 50 and 500 tablets

VANPELT & BROWN, Inc.
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Theobarb® with Mannitol Hexanitrate

Man-eagle design
from Hopi Indian food bowl

DELICIOUS WAYS TO SERVE LARGE AMOUNTS OF PROTEIN IN LOW BULK

Served in baked goods, custards, puddings, ice cream and other desserts – or in milk –

ESSENAMINE COMPOUND POWDER (with carbohydrate 25%), vanillin flavored – provides the high protein needed by the nutritionally deficient or seriously ill patient, without the bulkiness of ordinary foods. Or Essenamine may be served as a pleasantly crunchy "cereal," plain or with milk, cream or sugar, in the form of

ESSENAMINE COMPOUND GRANULES (with carbohydrate 30%), vanillin flavored

"With a high protein diet, healing begins on the first day."*

ESSENAMINE®

SUPPLIED IN THREE FORMS:

ESSENAMINE POWDER (unflavored)
7½ and 14 oz. glass jars.

ESSENAMINE COMPOUND POWDER (Vanillin Flavor)
1 lb. glass jars.

ESSENAMINE COMPOUND GRANULES (Vanillin Flavor)
7½ oz. and 1 lb. glass jars.

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*Matthews, J. G. Care and Healing of Traumatic Wounds. *Northwest Med.*, 50:512, July, 1951

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